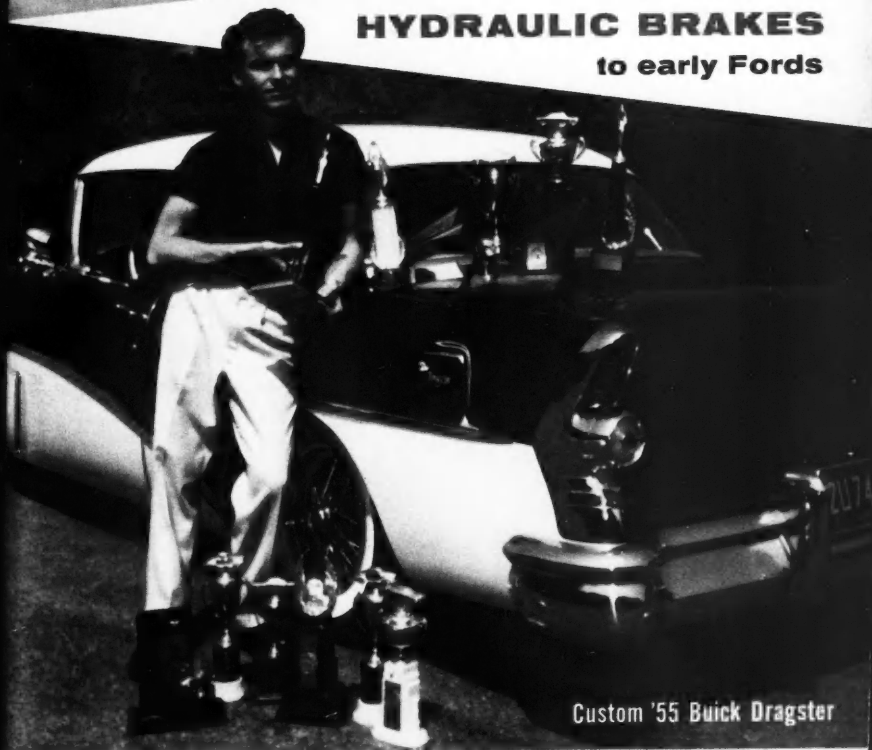


# CAR CRAFT

NOVEMBER 1955 25c



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to early Fords



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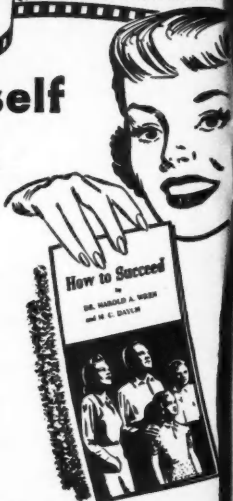
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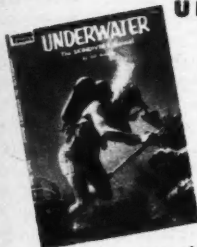




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# BENCH RACIN'

with Racer

## CHOOSING A CAM

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*dick day*

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## LETTERS

### SALT LAKE CITY JOKERS

Dear Sirs:

I have a '49 Dodge four-door which I've begun to customize. I have C'd the frame; installed '54 Buick headlights and '55 Buick hubcaps; the hood has been leaded also. It's painted Atlantic Blue.

My future plans are to lead the truck and door handles; remove the present taillights and use '53 Buick taillights tunneled in next



to the bumper in back. I also plan to have my back fenders cut out to show all the wheel.

I belong to the Jokers of Salt Lake, which is a great car club. Enclosed is a picture of my car.

Keep up the good work,  
Johnny Singleton  
Salt Lake City, Utah, "Jokers"

*You have a fine start, Johnny. Let's see the finished item when completed. — Ed.*

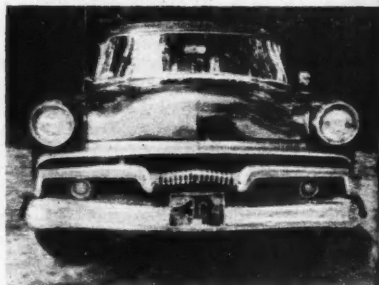
### FORD WITH A PLYMOUTH TOUCH

Gentlemen:

Enclosed are pictures of my '54 Ford of which I am very proud.

So far I have installed a '55 Plymouth grille, removed the front bumper guards and had the hood dechromed. The side trim has

not been installed yet, but will be a combination '55 Plymouth and '54 Merc.



I would like some advice on what to do with my trunk. I have back-up lights so I thought a full wheel continental kit installed would be better than dechroming.

In the future I would like to install a '55 Pontiac V8 engine.

Any further suggestions would be appreciated.

Yours very truly,  
Joseph J. Callaghan  
West Orange, N.J.

*I'm sorry Joe, the trunk decision is up to you. Continental kits look fine, but so do decked trunk lids. — Ed.*

### HOT CUSTOM

Dear Sirs:

My '53 Ford has been nosed and decked in the usual manner. I replaced the center piece in the grille with a straight accessory bar. I'm running 6:70x15 tires on the front and 8:20x15 on the rear, giving the car a noticeable rake. The front coils have been heated, dropping the front 2 inches.





The engine is an OHV "6" which in spite of the saying "6 in a row don't go" is very successful in shutting off V8's in the quarter mile. The engine has been mildly modified by the following: head milled .60 inches; bore, .100 inch; Winfield S-1 cam; chopped fly-wheel; dual intake manifold and dual pipes.

I enjoy your CAR CRAFT and am especially interested in the "How to Build a Custom" series.

Yours truly,  
Larry Roteman  
Los Angeles 47, Calif.

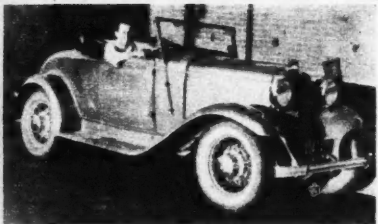
The "Building a Custom" series was fashioned for your year Ford, Larry. Glad you enjoyed it. — Ed.

#### NEW ZEALAND "ROD"

Dear Sir:

Ever since its introduction on the New Zealand market, I have had your magazine ordered and look forward to every publication.

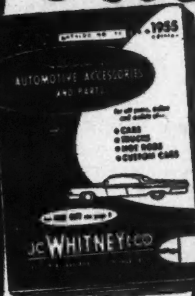
There is not much "hot rodding" out here, but as I have a '32 Ford full fender coupe and see what you boys can do with them over there, I couldn't help trying a little tuning.



I've had the head milled and am now fitting twin carbs and modifying the exhaust system. It's much more costly out here, since we have no hot rod shop or special equipment.

Sincerely,  
Austin J. Hadler  
Wellington, New Zealand

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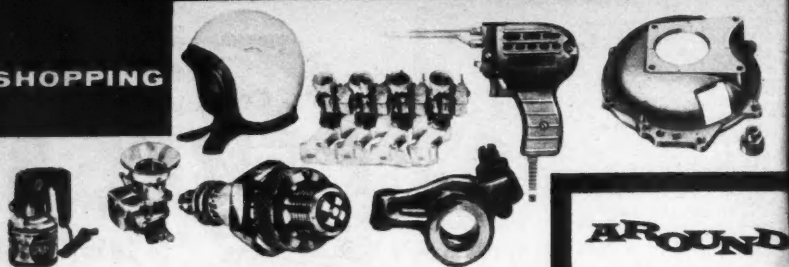
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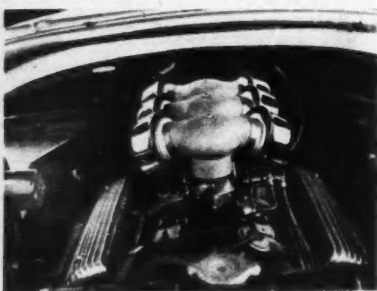
## SHOPPING



### NEW ALL PURPOSE TORCH KIT

A new Bernz-O-Matic propane-fueled torch kit especially useful for the multitude of jobs that require heat and flame has been announced by Otto Bernz Co., Inc., Rochester, N.Y. This new kit is built around the Bernz-O-Matic disposable fuel cylinder. It contains, in addition to the cylinder of propane gas, a pencil flame burner unit, utility burner head, a flame spreader for use with the utility burner, and a soldering tip for use with the pencil flame burner.

Write: Otto Bernz Co., Inc., 280 Lyell Ave., Rochester 6, New York.

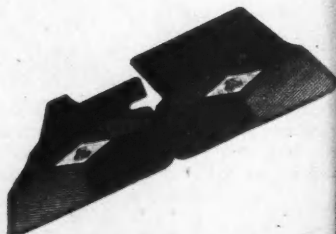


### RUBBER CONTOUR CAR MATS

Rubber Products, Inc., announces their new Rubber Contour Mats in color. Your initial is incorporated into the mat in contrasting color. Thousands of rubber fingers and blades keep shoes from spreading dirt. Choice of Black, Green, Blue, or Red background. Initial in Ivory. Specify year and make of car. \$9.95 F.O.B. Mitchell Rubber Products, Inc., 2120 San Fernando Road, Los Angeles 65, Calif.

### AIR CLEANER ADAPTER

This new air cleaner adapter designed for triple manifolds, provides greater volume for Chevrolets and Fords. Unit uses 2 5/16 inch airhorn and is only 2 3/4 inches in overall height. It is designed so that three adapters can be mounted on practically all triple manifolds. For information write: Nicson Engineering Company, 4546 East Washington Blvd., Los Angeles 22, Calif.



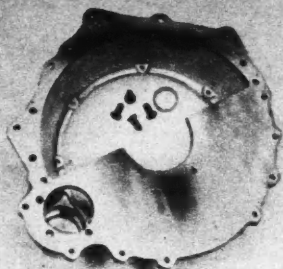
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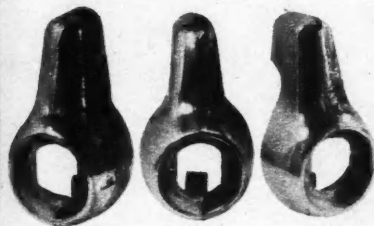
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**CHEVROLET V8 ADAPTOR FOR FORDS**  
Hildebrandt adaptor for Chevrolet V8 to '32-'48 Ford and '39-'50 Mercury transmissions. Plate and cast housing are used for these transmissions. Cost: \$58.50. For '49-'55 Ford and '51-'55 Mercury transmissions, steel plate only is needed. Price: \$42.50. Adaptor puts starter motor on the opposite side from the steering to give easier installation. Pilot bearing adaptor furnished. Write Moon Automotive, Box 432, Santa Fe Springs, Calif.



#### CROMIT—A NEW PROCESS

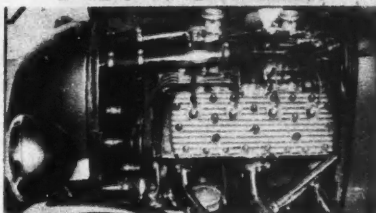
The Cromit Products Corporation announces a revolutionary process for the cold plating of all metals, wood, plastics and compositions. No matter how rusted or pitted automobile chrome parts may be, they now can be brought back to a beautiful, smooth, lustrous finish at a fraction of the time and cost of previous methods. **CROMITizing** is a revolutionary process chemically combining metal and liquids which are sprayed and buffed to a bright plated surface. For information write: Cromit Products Corporation, 655 Beacon St., Boston 15, Mass.

NOVEMBER 1955



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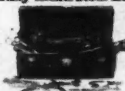
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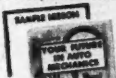
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# The 'Dragon' Wagon



Photos by Joe Moore

LATE IN OCTOBER of 1954, young Merlin Windham, with a rather large photo album tucked under one arm, walked into the private office of Bob O'Leary, who operates a large Buick agency in Downey, California. Confronting Mr. O'Leary, the young man nonchalantly said, "Sir—with your help, I'm going to put your new '55 Buicks on the Southern California map!" After making his informal introduction, he then spread out the prize collection of photographs contained in the tattered album. The photos told a seven year story of five cars—all showpieces—and two of them former drag strip record holders. The proposition is

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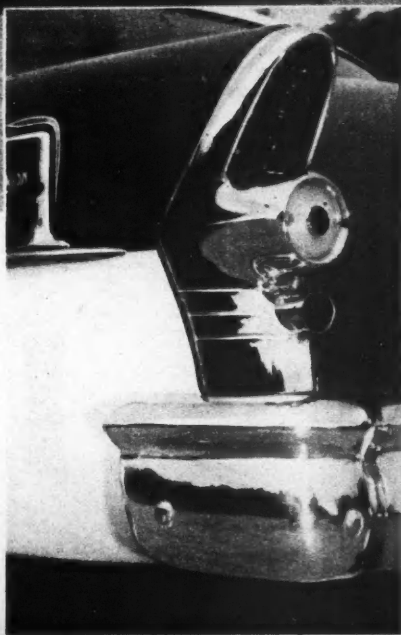
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Merlin Windham's friends called him crazy for his zany approach, but we call him — **CRAZY SMART!**



the balance was a simple one. All the young automotive enthusiast wanted for his past record was a new '55 Buick Century — a sponsorship for custom work — and a free hand in exploiting his plans. For the three items, he promised to produce future sales, excellent publicity and an array of glittering trophies. O'Leary, marveled by the determination of the

*Exhaust tips were re-routed through the chrome taillight housings where the small round reflector was originally placed.*



Dragon Wagon  
CONTINUED



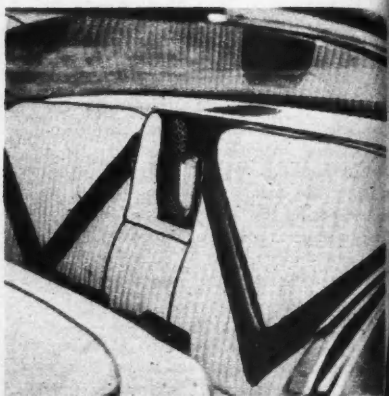
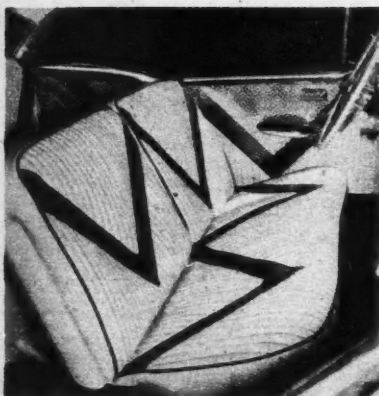
*Radical lowering lends Buick the custom look. Exterior paint consists of Purple and White lacquer matching the extravagant upholstery of double diamond motif.*

youthful boy, agreed!

Once the new '55 Buick "stick-shift" Century was unwrapped, Merlin started checking off the itemized list for future plans. First call was for minor customizing. The Century model was rolled into the agency's body shop where the fender portholes were filled in solid. Next came the removal of the hood ornament along with the Century emblems found on the sides of the body. The trunk

lid received the same de-chroming treatment. For specialized items such as the exhaust tip innovation and the lowering, Barris Brother's custom shop was selected to do the honors. The exhaust tip treatment consisted of re-routing the exhaust up through the large chrome taillight housings (see **CAR CRAFT**, October '55 Torch Tips).

Windham wanted the interior to be a prize package. Gaylord's Upholstery Shop



*Interior constitutes Gaylord's latest combination of using chrome mesh screen with radical designed patterns. Color combo of Naugabyde interior is Purple and White.*

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gave the Buick the popular rolls and pleats in a harmonious color combo of purple and white. The added highlight that Gaylord incorporated into the interior was the installation of diamond shaped, chrome perforated screen along the door panels. The motif of the entire interior is a beautiful double diamond design. To put the finishing touch to the O'Leary sponsored car, Von Dutch, striping king of Southern California, was

*Wire wheels are from Buick "Skylark."  
Note strange dragon striped on body.*

unleashed for an array of surrealistic images.

Since the Buick's completion, Merlin has made good his promises. The agency's showroom has taken on a tinge of gold due to the many awards that have been won at local drag strips and auto shows. As a final tribute to the partnership, the car can now be seen at the spectacular International Motor Revue show now being displayed at the Pan Pacific Auditorium in Los Angeles.



Von Dutch striping is evident on gas flap which conceals the trunk pull-latch. After Buick had participated at local drags, fellow contestants tagged it "The Dragon Wagon."

# VERSATILE ROCHESTER

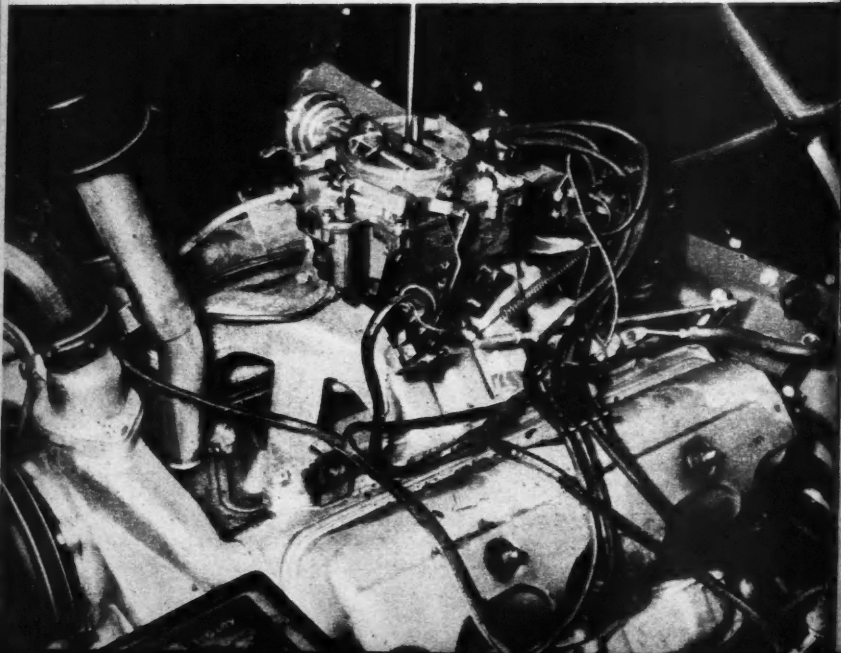
carburetor from 1955 Cadillac has the potential of working on a lot of engines

**WE** CAME UP with a carburetor swap in the August '55 issue of CAR CRAFT and from all appearances, we really hit the jack pot. Since the issue hit the stands, we have been deluged with letters from not only Olds owners expressing thanks for the tip but from owners of other types of cars that want to know if they can do something along the same lines. They want a little better chance at the drag strips in the stock class against

the other *cheaters*. Around the Los Angeles area at least half of the contestants in the stock classes should be arrested for perjury after swearing their car is stock.

The '55 Cadillac Rochester carburetor which we used to pull the swap with on the '54-'55 Olds has the advantage of small primary venturii for average operation and large secondary venturii for all-out use. The total venturi area is 3.79 square inches and

*Rochester model number 7007970 carburetor was designed for 1955 Cadillac but bolts directly to '55 Plymouth manifold. Vacuum and choke control lines were reshaped.*





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this is quite a bit. When used on the '54-'55 Oldsmobile, venturi area was increased 32% and horsepower increases were astounding. We're been getting letters from Pontiac, Buick, Chevrolet, Plymouth and several other car make owners wanting to know just why they can't do the same thing.

The first thing that has to be considered is the carburetor base bolt pattern. They were different between Olds and the Cad but since the bowl castings were the same, we had no trouble switching the Cad bowl to the Olds throttle body. Also, since they were both Rochester carburetors, the swap wasn't externally visible and the air cleaner fit without any alterations. Since we have had no opportunity to personally check every late model car with a four barrel carburetor, we are going to have to crawl out on a limb and guess at some solutions.

If your car has a four barrel Rochester carburetor, chances are that you can put the Cadillac bowl and cover assembly on your throttle body. If your car doesn't have a Rochester, and the carburetor you have doesn't

offer enough venturi area to suit you, buy a Cad carburetor to manifold gasket and try it against your intake manifold. If the bolt pattern is the same and the throttle body passages line up with the intake manifold risers, the Cad carburetor should fit except for any throttle linkage changes which might be necessary. Whether your air cleaner will fit or not is something you will have to try. If the carburetor passages line up with the manifold intake risers and the bolt pattern doesn't, perhaps you can still make it fit by drilling and tapping the intake manifold to fit the Rochester bolt pattern.

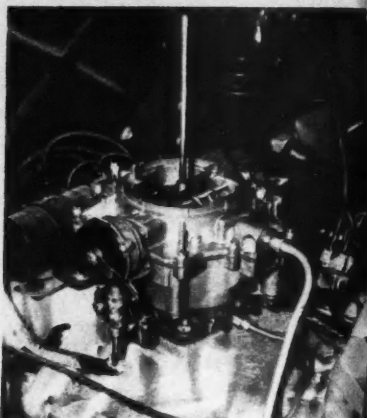
We give you all of these suggestions because, as we have said, the mail pours in wanting to know how to put the Cad carburetor on all different makes and we don't know about all of them. Our latest attempt was to put one on a '55 Plymouth with power pack. The stock Carter quad had a total of 3.54 square inches of venturi area which is only .25 less than the Cad Rochester's 3.79 so we were a little dubious about getting much of an increase since the little 270 inch Plymouth

## VERSATILE ROCHESTER

CONTINUED



*Stock Plymouth four barrel has a venturi total area of 3.54 square inches which gives the 270 inch engine lots of air.*



*Asbestos jacketed thermostatic choke line had to be reshaped to fit Rochester automatic choke. Adaptor fitting was used.*

engine seemed to be amply carbureted as it was.

The Cad Rochester #7007970 slipped on the Plymouth manifold with no alternations necessary whatsoever. The air cleaner had to be "relieved" slightly with a small ball peen hammer to clear the Rochester accelerator pump rocker arm and a few washers were needed between the wingnut and the air cleaner to get a firm fit. The car we tested had an overdrive kickdown switch mounted on the Carter so a bracket had to be fashioned to hook on the Rochester and hold the kickdown switch in a position where full throttle application would operate it. Had the car been our own, we would have mounted the kickdown switch on the floor so that it could be operated with the left foot. In stock position, full throttle attempts in overdrive usually resulted in a kickdown to direct gear. The Plymouth accelerator linkage bolted directly to the Rochester.

With the Cad Rochester mounted and ready to be tested, we fired up the engine using Cad stock jets of .049 primary and .073 secondary.

We had previously tested the car stock in both acceleration runs and on the chassis dyno at Ak Miller's garage in Whittier, California. The stock results were 116 horsepower at 75 MPH in high gear direct. After a tuneup to factory specifications and new plugs, the dyno recorded 123 horsepower at the same speed of 75 MPH. With the Rochester, our first reading was 130 horsepower at 75 MPH. We subsequently did a lot of jet changing to see if we could raise this figure, going as lean as .047 and as rich as .051 in the primary side of the carburetor. Mileage tests, dyno tests and acceleration trials finally brought the jetting back to stock .049 for the primary and leaned out to .063 for the secondary. Since lean secondary jets are not available from dealers, a pair of primary jets were drilled to .063 and used to replace the stock .073 secondary jets. The final results from all of our testing was 132 horsepower at 75 MPH in high gear.

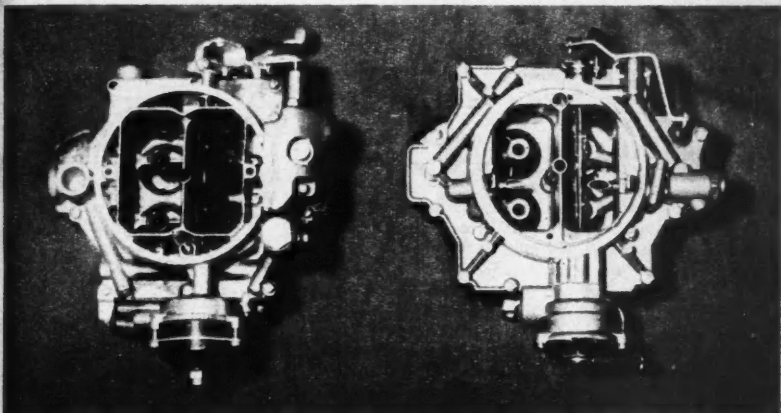
The increase does not start to compare with the Olds test of a few months ago but don't forget, neither does the increase in venturi area. Nine horsepower isn't a great achieve-



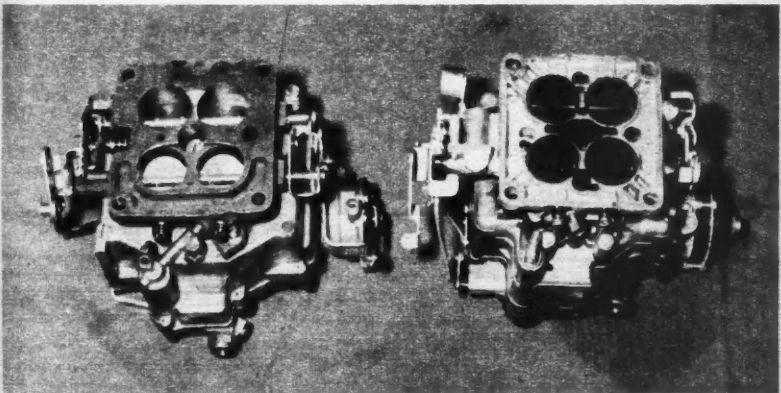
ment but the Rochester operated much better than the Carter on both acceleration and cornering. The Carter had two flat spots on acceleration and would quit completely on tight corners. The Rochester had no flat spot on acceleration and took very severe cornering with little fade. Mileage wise, the two seemed to be a tossup.

The tests with the Plymouth are probably

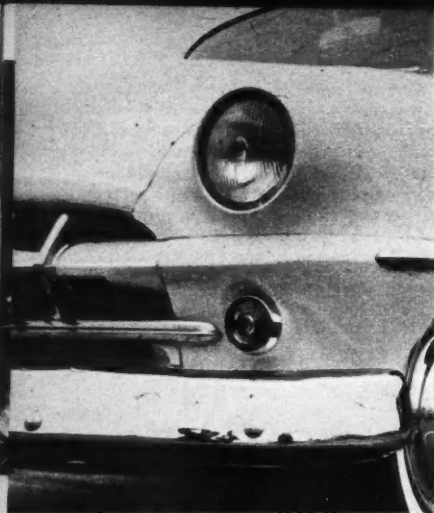
a good indication of what you might expect if you use a Cadillac Rochester on an engine that is already equipped with a carburetor of ample venturi capacity but if your engine is like the late Oldsmobile and really needs more carburetion, give it a try. You might not get away with it at the drag strip because the boys are getting wise but at least it might feel better to you.



*Top view of the two carburetors with the Rochester on the right. Plymouth air cleaner fits on the Rochester but a slight indentation is needed to clear accelerator pump.*

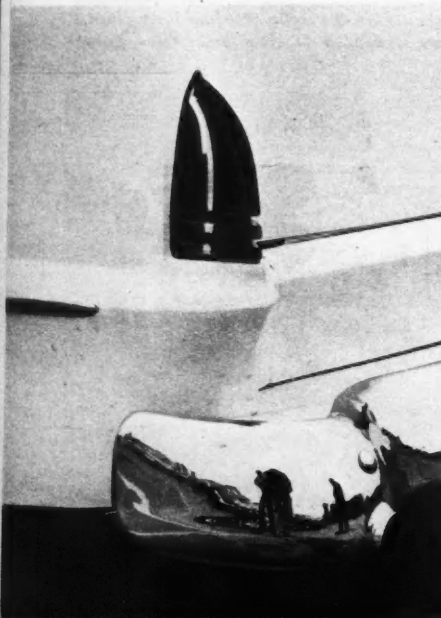


*Bottom view with Rochester on the left. These carburetors are interchangeable with little work since the bolt pattern and openings in the throttle base are the same.*

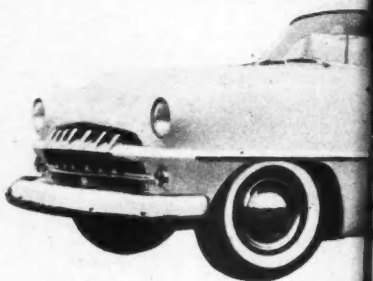


*The stock headlights were smoothly frenched to the fenders by using '52 Dodge headlight rims. Excess chrome trim encircling stock grille opening was removed.*

*The large '53 Lincoln taillight lenses fit into the Plymouth rear fenders like a glove. The exhaust tips have been molded into bumper (CAR CRAFT, February '55).*



## The car that



*under the garish  
the Plymouth lie*

**M**ANY PEOPLE are short on imagination—but not Jack Gordon, a resident of Duarte, California. After going the route with two previous custom cars, a '40 Ford coupe and a '52 Olds that was capable of bringing home drag strip awards, he decided that to come up with a completely different custom car combination he would have to acquire an off-breed make for his next creation. He looked the field over and found that lying secretly disguised under the '54 Plymouth's massive chrome trim was a basic body design that had high merit for customizing.

With his decision final, he procured one of the '54 models and started making plans for the future with ace body man, Bill Huber, of Pasadena, California. Once the ideas were on paper, the face lifting sessions began.

The grille treatment consisted of reworking the center section of the straight stock grille bar and then adding seven '54 Chevy vertical grille bars. The headlights were frenched to the fenders utilizing '52 Dodge headlight rims. The hood, deck and all un-

at

## Jack built



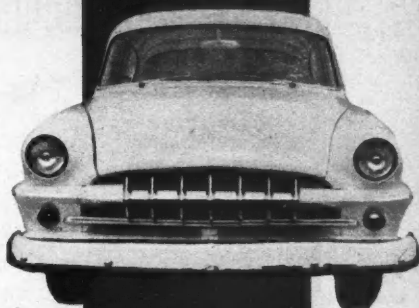
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essential chrome trim was removed—*naturally!* Stock taillights were discarded and replaced with the large '53 Lincoln taillight lenses. The large lenses protruding through the rear fenders lends a unique balance to the overall rear end appearance. The rear bumper received the popular built-in exhaust tip treatment. To detail the Plymouth out, a '53 Plymouth side trim strip was adapted to the front fender flare, while '51 Dodge strips highlight the rear fenders. The car was dropped evenly all the way around. In front, the springs were relieved of two coils, while in the rear, blocks were installed. The finishing touch was a complete rolled and pleated interior combo of white and blue, executed by Jeff's Top Shop of Pasadena, California. The exterior paint job is a harmonious Polar white.

By the time this issue hits the newsstands, it's very possible that Jack Gordon will be reading his car feature from the sack of one of Uncle Sam's army camps. He's definitely a boy with foresight . . . "How 'bout it Jack—any ideas for a jeep?"

Photos by  
Joe Moore

NOVEMBER 1955

PART II

fiberglass female mold



by Ray Brock



1. First step of preparing the full size model for the female mold is to use molding clay to make dams for parting lines, vertical to body lines.



2. When all parting line dams are complete, a heavy coat of automobile body wax should be applied to model, polished to hard film.

Photos by Lester Nehamkin

**I**N THE OCTOBER ISSUE, design, mock-ups and molding of a full scale plaster model was discussed as Part One of building your own fiberglass body. That much is required, but this month we come to a section of the body building process where a little personal choice can be used.

The choice which we refer to concerns whether you should use a male mold, a plaster female mold or a fiberglass female mold. Last month's installment brought you up to a full size plaster model which was finished off to match your own requirements. Actually, at this point, you could make a body but before you get over-anxious, read some of the pros and cons of the three methods from which you may choose.

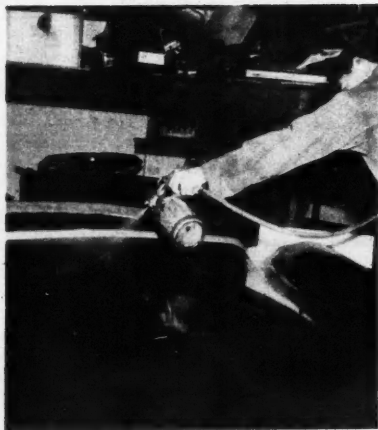
The male mold method is the simplest but also gives the poorest results. Using this method, you could laminate a body over the outside of the full scale model described in part one and have a fiberglass body. The pro argument for this act is that there is no female mold involved but that is about as far as that argument goes. On the other side of the ledger the list is longer. For example, the body won't be smooth since seams and other thickness irregularities will

appear on the outside of the body instead of the inside where they aren't visible, the body will not release from the male mold so the mold will have to be gouged out of the body shell and general working problems are just plain nasty especially when the problem of obtaining a smooth external finish arises.

Of the other two methods, the plaster female mold is the cheaper but is not as easy to handle as the fiberglass female mold. A body section mold made of plaster is not only heavy and hard to handle but it is also very susceptible to cracks and chips when the mold sections are being moved about or assembled.

The fiberglass female mold is the best method to use when making a fiberglass body. It is light in weight, flexible instead of brittle, the mold can be used as many times as you wish, body finish will be very smooth and any patching or sanding on the mold can be done easily. The big drawback is cost. Glass cloth, mat and resin to build a female mold for the Sorrell car cost almost \$500 but the molds he made were possibly thicker and better than necessary since he planned to make dozens or even hundreds of bodies from the single mold. For those of you who are more concerned with

*continued*



3. After the model is waxed, a coating of special parting agent must be sprayed on.



4. First step of actual lamination is to brush on two "hot" coats of pure resin.

## FIBERGLASS CAR *continued*

cost on a one-body basis, we will devote Part Three next month to the process of making a plaster female mold.

The first step of making a female mold is to decide just where the parting lines will be. They must be placed so that the mold will not wrap around the model and prevent the female mold from pulling off cleanly when completed. The part lines are made using oil base clay after the body lines have been analyzed to determine the logical position for them. With the clay molded two or three inches high along the best lines for the mold to be parted at, a putty knife or other thin straight edge can be used to cut a vertical line through the clay to the model surface. When the clay dams are complete, the full size model will be divided into several sections from which the female mold pieces can be easily removed.

The full scale model must first be prepared so that the mold sections can be easily removed after they are formed. A good coating of automobile body wax should be applied and hand rubbed or buffed until it is a hard glossy film. The wax film will not act as a releasing agent however, so releasing agent must next be applied over the wax. Bob Sorrell sprayed Thalco Garalese over the waxed surface of his full scale model for a releasing agent. The agent should be sprayed instead of brushed on because brush marks might show up in the female mold.

The first step of the actual laminating process is to apply a "hot" coat of resin to the section to be laminated and also on the clay dam face at the parting lines. The term "hot" means that a high percentage of catalyst is used to make the resin cure fast. After the first "hot" coat has set about thirty minutes, the second layer which is also a "hot" coat should be applied. Black resin dye should be used in the second coat since it makes a dark background that will show up any air bubbles when the actual body layup starts.

After the second "hot" coat of resin has set about thirty minutes, apply a single layer of  $\frac{1}{2}$  ounce surfacing mat saturated with resin that is slow setting and requires less hurried work. The reason for the initial layer of mat instead of cloth is that it is easier to sand should any imperfections have to be smoothed out in the finished mold. Squeegees made

*continued*



*5. After the two "hot" coats, a single layer of  $\frac{1}{2}$  ounce mat is cut to fit body.*



*8. At any spot where cloth will not stretch to fit contour; it must be cut and reinforced.*

*11. Bob Sorrell shows completed tail section of his female fiberglass mold.*







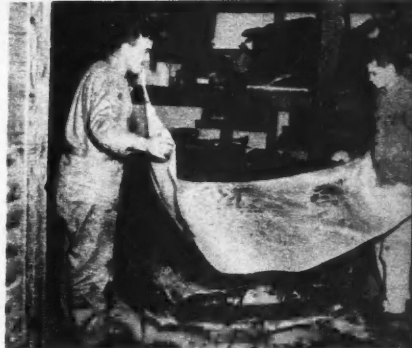
6. Layer of  $\frac{1}{2}$  ounce mat is then thoroughly saturated with slow setting resin.



7. Air bubbles which are visible as light spots under cloth must be squeezed out.



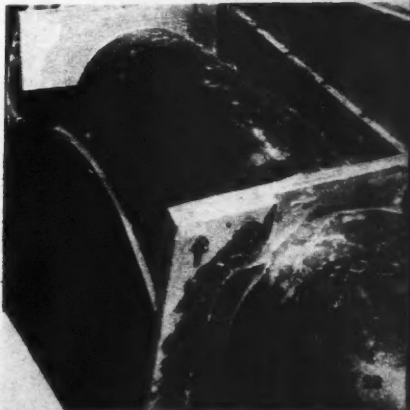
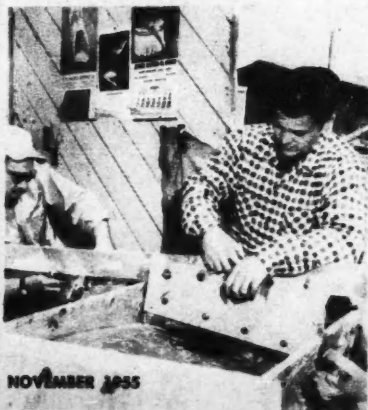
9. After  $\frac{1}{2}$  ounce mat and layer of cloth, a layer of three ounce mat is cut to size.



10. Glass cloth follows three ounce mat. Another layer of mat and cloth does it.

12. Wooden stringers must be laminated and bolted to stiffen sections.

13. Closeup shows how stringers are laminated to mold with glass cloth, resin.



## FIBERGLASS CAR *continued*

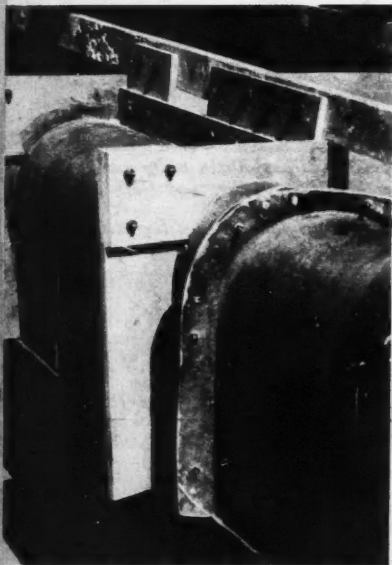
from thick rubber should be used to force all air bubbles from between the mat and the "hot" coats. The mat should be brought up the face of the clay dam at the parting line and squeegeed down firmly at the base of the clay dam to make sure that a square corner will be formed at the edge of each section. After this is done, the section should be allowed to set up overnight.

After the above is completed and set up, a layer of three ounce mat is next, followed by a layer of ten ounce chrome treated cloth. Both are saturated with slow setting resin and all air bubbles are squeegeed from between the layers as each is applied. There are cheaper materials than the chrome treated cloth but the chrome treatment keeps the cloth from raveling out when cut in irregular shapes to fit body contours. Another overnight period should be allowed after these two layers have been completed so that they will set firmly.

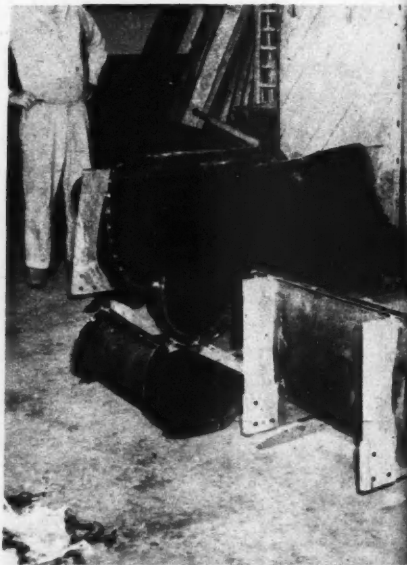
The last step is to repeat the above step of

a layer of three ounce mat and one of ten ounce cloth. After these final layers have set up, the clay dam can be peeled away and the area next to the completed mold section made in the same manner as the section just finished. Repeat the whole operation including waxing, spraying releasing agent, etc. Don't forget to spray releasing agent on the face of the fiberglass flange that was formed by the clay dam.

When the model is completely encased with sections of the fiberglass female mold, the next step is to form a framework that will hold the sections in their correct relative positions. Since the female mold is turned upside down when a body is being laminated inside it, a pair of long flat stringers should be used as a base for all of the body sections to fasten to. These stringers will lie flat on the floor when the mold is inverted and the sections should be fastened to them with bolts so that they can be separated for removing a completed body. The fiberglass flanges of the individual sections should have holes drilled through them at six or eight inch intervals so that they can also be bolted together to

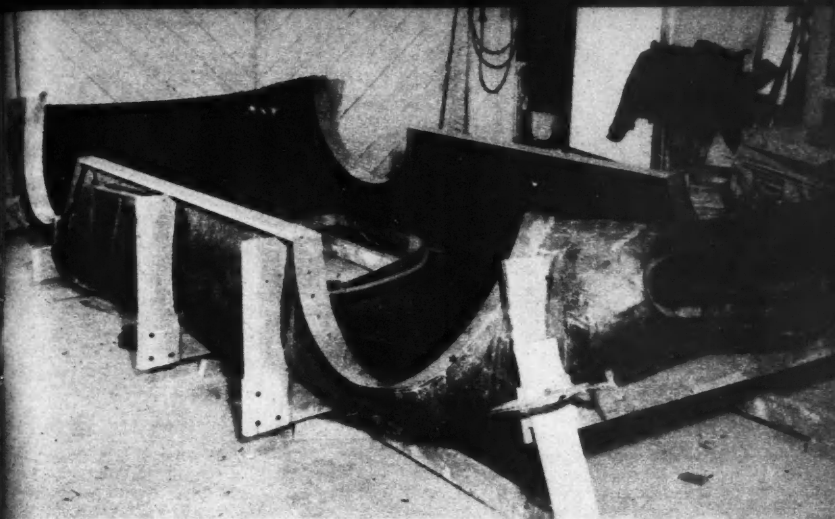


14. Sections of mold are also held together by bolts through flange faces.



15. Sections of fiberglass female mold ready for assembly. Note wide flanges.





*16. The complete mold for Bob Sorrell's body is now ready for use. Sections are securely fastened together and sheet metal flanged around wheel openings. Next, a body.*

hold the sections in proper shape yet be easily disassembled.

Wooden or metal braces which are used to fasten the mold sections to the flat stringers should be laminated to the sections by means of strips of glass cloth or mat saturated with resin. The fiberglass female mold should be supported so that there will be no sag anywhere in the mold when the entire assembly is bolted together after removal from the full scale model.

When all of the braces are located, the sections can then be taken apart for the first time and removed from the plaster model. You now have a full size female mold. If proper procedure was followed while constructing the plaster model and the female mold, you will only have to trim some of the edges with a hacksaw or sander and you are ready to start building bodies. If there are any air bubbles visible inside the mold near the surface, they should be picked out and filled with a mixture of resin and glass fibers, then sanded smooth after they have set.

As we stated previously, the fiberglass female mold is expensive but is the more professional method. If you intend to build more than one body, this should be your choice but if not, check with us next month because we

will show you how Bob Sorrell built his first mold using plaster. His plaster mold was only used to build two bodies before he discarded it in favor of the fiberglass mold shown here.

There are several rules when it comes to working with resins and glass that are governed directly according to the brand of materials you use, so for this reason we will omit them from this text. The company which you buy from will furnish instructions. One thing which we will mention though is that acetone is the only thing which will remove the resin from your tools and hands. Keep plenty of it handy and clean your squeegees and shears immediately after they have been used because the next day, it will be too late.

Refer to the yellow pages in the phone book of your city or the nearest large city to you for information as to where you can purchase plastic materials to build a female mold. Although we refer to the finished product as fiberglass, the word is actually a common derivation of the Owens-Corning trademark name "Fiberglas" and distributors for the various materials will be listed under the Plastics heading in the classified section of the phone book.

## OLD DAD SHOWS



Photos by E. Rickman

**B**ILL MONTERO of San Jose, Calif. calls this immaculate little street roadster a hobby, and from all appearances I should add that it is a masterpiece of modification and restoration as well. Two years in the making, this dazzling example of ingenuity has brought home many a trophy and beauty award for its owner.

Construction of the car started with a stock '32 Ford frame which Bill fitted with a dagoed front axle, '46 Ford hydraulic brakes front and rear, along with '46 Ford spindles and 15-inch disc wheels fore and aft. Tires are 6.70x15 white walls on the front and 7.10x15's on the rear. Shock absorbers are Columbus, and the rear end remains stock with a gear ratio of 3.78 to 1. For a transmission, Bill used a '46 Ford box running Zephyr gears, while the steering setup is from a stock '32 Ford.

Under the hood lies the brutish form of a ported and relieved 1951 Mercury engine running an Iskenderian 1007 cam, Silvolite pistons, Crab ignition, Offenhauser heads and dual manifold with two Ford 97 carburetors. Bill uses an Auburn clutch and an 18-pound

*(Continued on page 28)*



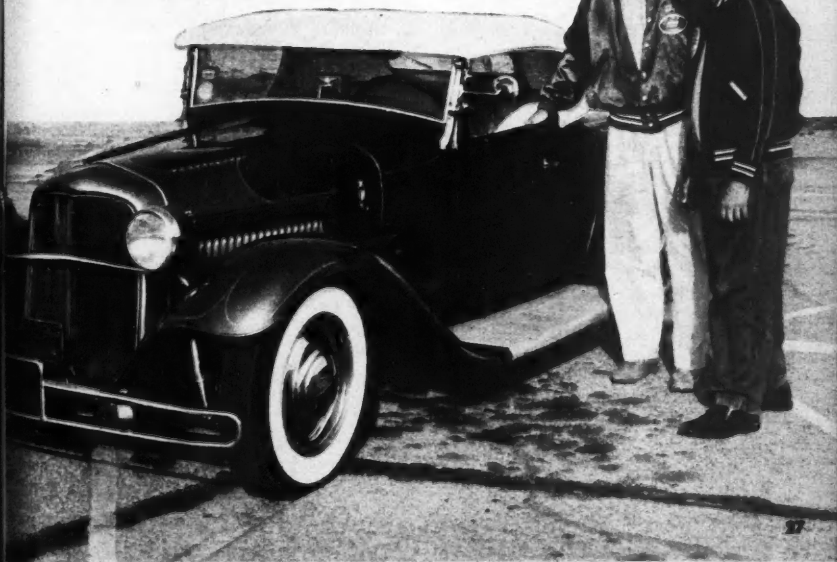
## 'EM HOW

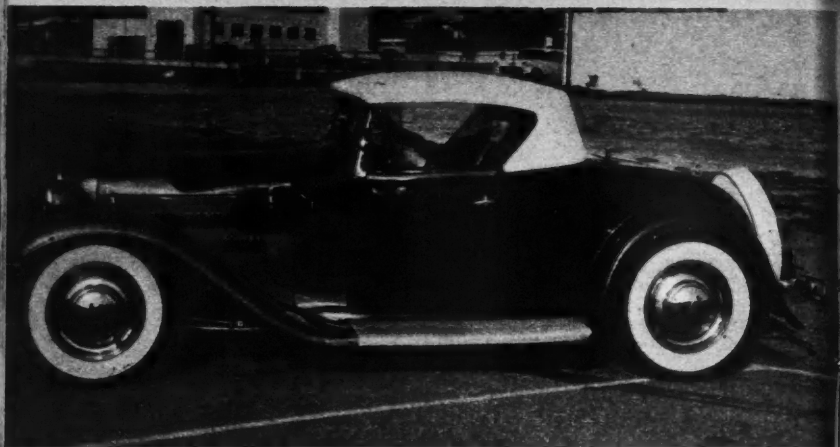
by William Dalbey

Bill Montero's hobby consists of civic activities, timing associations and his roadster

*A familiar scene at automobile shows is Bill Montero with polish rag as he gets the Hula Girl ready to win another trophy.*

*Don Montero gets to use his dad's roadster occasionally so he shows NHRA Club Organizer, Chic Cannon, the layout.*





*Side view of the Montero '32 shows just how low a duece silhouette can be when it is chopped on the top, channeled on the bottom and sectioned down the middle.*

## OLD DAD'S ROADSTER

*continued*

flywheel. The exhaust system is dual, with headers and stock Ford mufflers. A special radiator was used and a sectioned '32 Ford shell was installed. Much chrome work enhances and brightens up the engine compartment.

A high point of interest is the beautifully reworked '31 Ford roadster body which has the top chopped 6 inches, body channeled 4½ inches over the frame and a 2½ inch section job. This brings its overall height down to 54 inches. The eye-arresting paint job is Fairfax blue and the upholstery was done in blue and white Naugahyde by Frank Spingola.

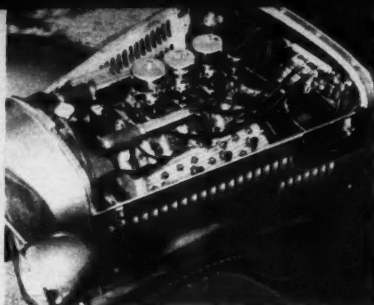
For an instrument panel, Bill reworked a dash from a '41 Buick to fit the small '31 Ford interior very nicely. The roadster is full fendered with running boards, and King Bee headlights were added to the front, while '40 Chevy taillights dress up the rear. The bumpers are special items, hand-formed and finished off in sparkling chrome. The overall weight of Bill's roadster is 1,985 pounds, with a cost of \$2400.00 to complete and put on the road.

All this beautification was not in vain, for Montero walked off with the grand trophy of the January 1953 Peninsula Autorama held in San Jose's Civic Auditorium.

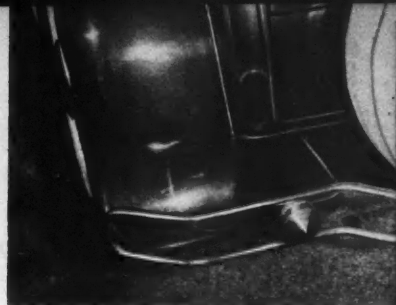
Besides building hot rods and winning trophies with them, Bill's other passion is hard tops which he builds and races, also, with the same amount of success.

For a living, Montero is a mild mannered instructor-operator of the Pacific Judo Academy in San Jose as well as a first rate physiotherapist and machinist. Above and beyond this he finds time to officiate as the President of the San Jose Igniters, President of the Santa Clara County Timing Association, plus being an active member of the Santa Clara County Chapter of the National Safety Council. Bill's son, Don, is also a member of the Igniters club, following Dad's example with a wild duece.

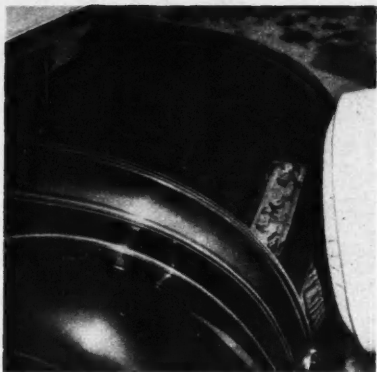
At 39 years of age Bill Montero leads quite an active civic life all in the interest of his community, the young hot rodders and the sport itself. A great guy with a big weakness for fine machinery.



*The GO section of the car consists of a 296 inch Merc loaded with horses.*



*Custom made bumpers were formed from heavy wall tubing, protect spare tire.*

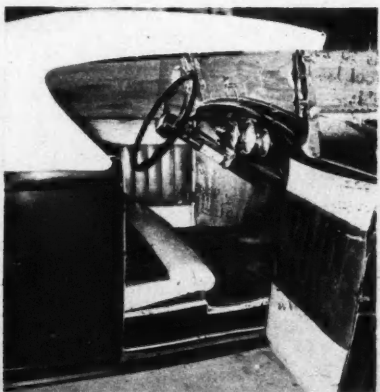


*Gas tank and battery were placed in deck for road clearance, compartment flocked.*

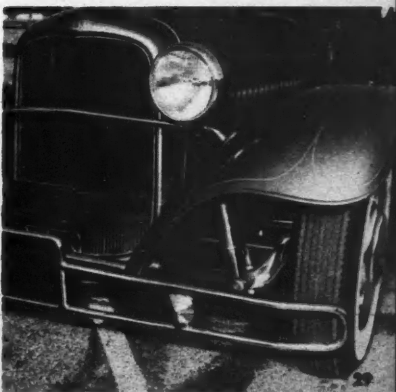


*Running boards are rare on a modified roadster but very handy. Note exhaust.*

*Custom interior has '41 Buick instruments in '32 panel. Late column shift is used.*



*Front axle is Dagoed and chromed. Original fenders have been sectioned to fit body.*



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# HEADLINER

## PART III

with trade secrets out in the open—YOU  
now can make and install YOUR OWN headliner

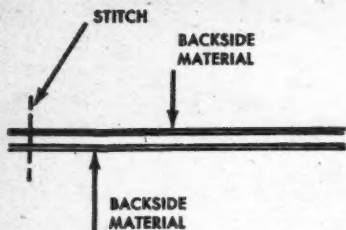


Diagram A. stitch is used for seams that are hidden by the stainless steel ribs. Material is sewn together from the backside.

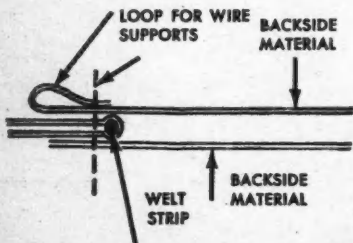


Diagram B. stitch is used for sewing seams together that employ the wire supports. Note welt strip and loop position.

**H**HEADLINER—seems to be a word that puts most amateur upholsterers in a solid trance. When encountering this phase of upholstery, they feel that even if they do accomplish cutting and sewing the various sections of the headliner together correctly, they never can hope to achieve the professional tight fitting finished item. For those of you who have been following and taking advantage of our upholstery series for the past two months, we have a secret to divulge—the secret being, how *you* can make *your own* headliner and install it successfully.

Like our past upholstery articles, we emphasize that you keep close tab on your old upholstery as you remove it. You'll find this very important when making your new headliner, for your old one actually serves as a pattern for cutting out your new material—*herein lies the secret!*

When removing your old headliner, remove it in one piece. After you have it out of the car, lay it out on the floor and dissect it into separate sections by splitting it at each cross-seam. Take caution when splitting the sections apart to mark each panel, seam-for-seam, as shown in step number one of the how-to-do-it photo story. Once you have



## Text and Photos

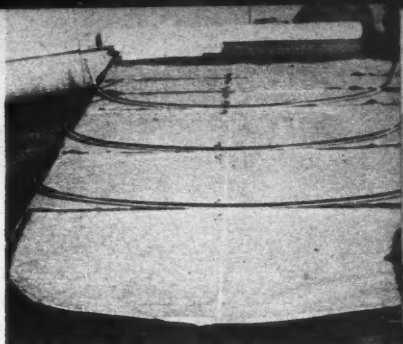
By Dick Day

marked each seam, lay the old headliner out as it was originally sewn together, to get an idea of how it goes. The next step, of course, is to take each section, one at a time, and use it for a pattern for cutting out the new material. When cutting the panels out make sure you allow a half-inch of excess material around border for seaming.

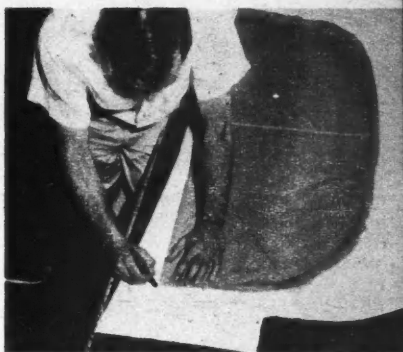
For sewing the sections together, use the stitching examples illustrated on the opposite page. On DeVille model cars, which incorporate polished stainless steel ribs to cover the seams, use the *diagram A* stitch. On models that use a stiff wire for supporting the headliner seams, then *diagram B* is employed. Notice that a welt strip is sewn into the seam along with a loop which houses the wire rib. On seams that require the welt strip, make sure that your stitches run even and straight, for this stitch will be visible after the new headliner is installed.

With the headliner sewn together and ready for installation, slip the wire supports through the loops of the headliner and insert the wire ribs into their stock slot positions along the inner sides of the top's frame. If your car possesses the stainless steel ribs, then they should also be installed at this time. The next step is to start at either side of the headliner, pulling it tight, fitting in around the exposed steel ribs and then tacking it secure to the tack strip. With one side of the headliner tight, now go to the other side, securing it in the same manner. Next, the rear is worked tight and tacked down. The last step is to work the front section taut and secure it into position. If a plastic material is used for the headliner and small wrinkles are dominant, a sun lamp can be played on the area for a short time which will shrink the wrinkles back into a smooth contour.

This covers the basic process of stitching up your new headliner, but again let us emphasize, when you remove the old headlining material, notice the way it is installed and how it is sewn together. If you pay particular attention to this one item, chances are that your new roof will be a breeze. We wish to thank Scott's Top Shop, San Diego, California, for the following illustrative photographs.



1. After removing headliner, lay it out flat and mark each seam panel as shown.

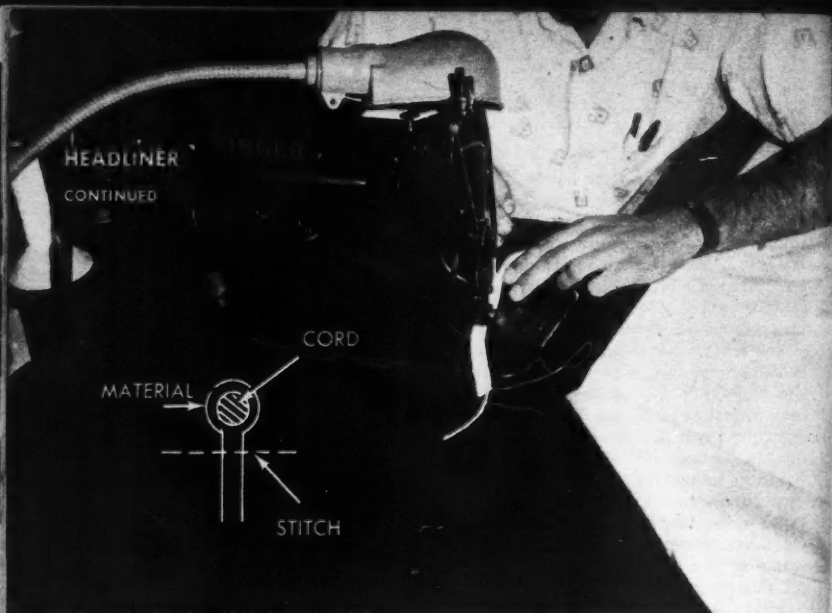


2. Starting with front panel, lay each section out on new material for pattern.



3. Panel seams that will be covered with steel ribs are sewn together (Diagram A).

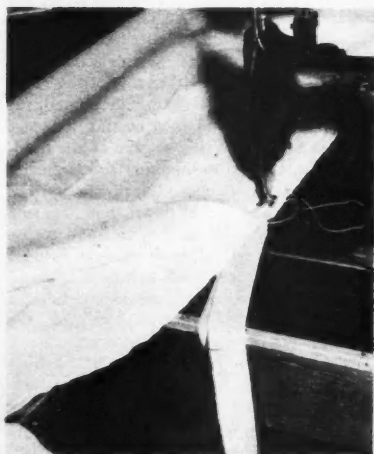
CONTINUED



4. *Welt strips are made by sewing strip of material around twine (See inset).*



5. *Seams using wire loop and welt strip are now sewn together (Diagram B).*



6. *Here you see how the loop is sewn to the seam of headliner (See Diagram B).*





7. The wire supports are now threaded through the loops sewn in headliner.



8. Install the headliner into position. Stainless steel ribs are now installed.



9. Split the material around ribs and work it tight, then tack it to the tack strip.



10. After securing the sides, tack down front and rear sections. (See lead-in copy.)

## Barris Brothers Custom Shop

# REST



George



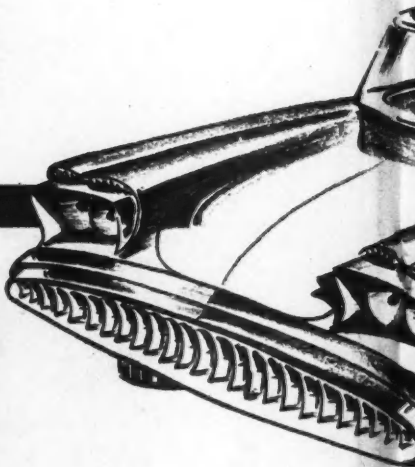
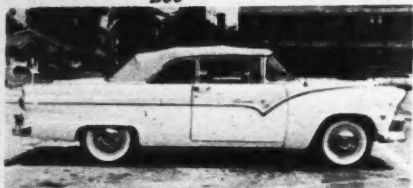
Curly



Bob

**T**HE story behind the highly successful Barris Brothers Custom Shop reads something like a story book. Born in Chicago, and migrating to Sacramento, California, when very young, George's and Sam's early years gave no hint of future custom car building. The two participated in building cars the same as every young teenage enthusiast has, but nothing of a specialized nature. The turn of events came when George, still in high school, went to work for a local body shop as a pure parts-chaser and general helper. It wasn't long 'til the young craftsman began to rejuvenate his personal '36 Ford three-window coupe with a few of his original ideas. Once the rest of the local car group

got a gander of the custom innovations, they imitated their buddy-buddy's talent. An hour work on their own continued 'til George came on a short vacation, when he opened a local custom shop, and referred. George took the short time was successful in a custom shop. When Sam returned from World War II service, the brothers decided that a shop would be a favorable investment. Sam taught the fender and within a short period of time the three stall garage in Colton was busting its seams.



Illustrations by Don Fell

# STYLES

## The '55 Ford

of the coupe's customizing they immediately procuredddy's talents for some after-their own cars. This conge came to Los Angeles for on, whereupon, visiting a shop, employment was of-look the job and within a successfully managing the When Sam returned from service in '46, the two d that owning their own favorable venture. George e fender bending business ort period of time the small ge in Compton, California seems with work. Since

moving to their new location at 11054 Atlantic Blvd., Lynwood, California, their skillful torches have worked on everything from '29 roadsters to fifty-thousand dollar custom cars belonging to some of the country's top celebrities. Probably their most successful car was a creation of 1954 called the "Golden Sahara." This radically customized '53 Lincoln Capri walked off with the sweepstakes award at last year's International Motor Revue extravaganza, and received international acclaim.

Both George and Sam welcome vacationing visitors for a shop tour, and if you're just local talent drop in, you'll find the shop very informative from custom car building and a congenial bunch of guys.



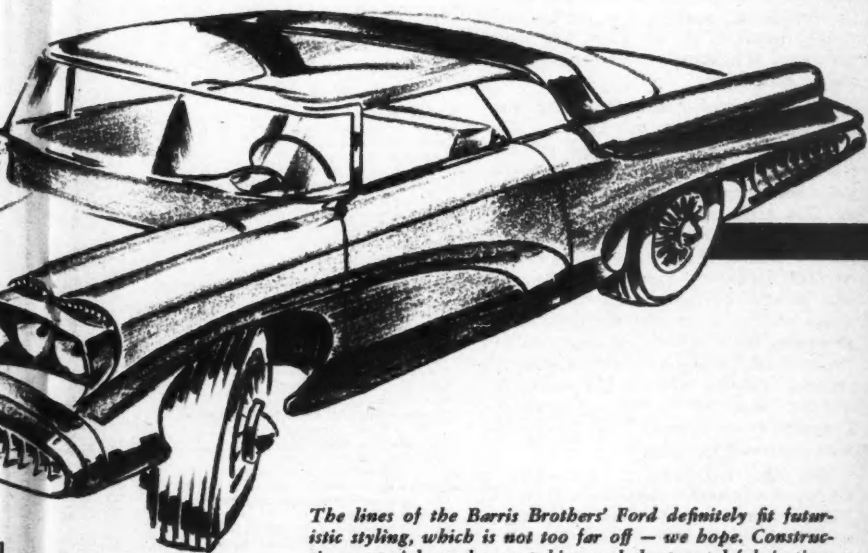
Sam



Johnny



Smiley



*The lines of the Barris Brothers' Ford definitely fit futuristic styling, which is not too far off — we hope. Construction materials used were tubing and sheet metal fabrication.*

(continued)

## RESTYLES continued

"Is it possible to take a completely stock product from an automotive manufacturer and turn it into a fully functional, restyled *Dream Car*. If so, then what would be the price tag?"

These two questions, or ones to their effect, have been asked in just about every letter directed to CAR CRAFT's new restyling feature. We don't believe that any one of these correspondents really are determined to build such a car, but like us, are purely interested in the possibility of the car and what could be expected of its completed appearance. When customizers, Sam and George Barris were given the following '55 Ford convertible to restyle, these two requisitions went with the assignment.

The '55 convert and its radical innovations found on the following pages, represent feasible customizing treatments into the world of futuristic styling. The custom also bears out some styling themes that are not too far from the future production cars. The car is too detailed in construction to explain each styling treatment, so our story will touch upon some of its not-too-far-off designing and cost of such a job.

The unique double rolled fender and headlight styling is an item that Detroit stylists already have down on paper for the near future. The Barris theme incorporates a special shade and a small simulated air scoop at top. The grille treatment consists of a combined bumper-and-grille assembly which offers the ultimate in front end styling simplicity. This innovation has already been built into some of our top custom cars to date, and is another future idea not far from the showroom floors of your nearest automotive dealer. Fender wheel openings have already received attention from production stylists. The late Oldsmobile product is a top example. Convexed rolled-in fenders go hand-in-hand with this same treatment.

The clean, full vision and optional open air top arrangement is reminiscent of the Sun Valley styling of the Mercury and other assembly line products. The metal partition is a trend already established.

The rear end styling of the futuristic Ford combines a sleek and harmonious treatment between taillights and protruding bumper exhaust tips. The center rear bumper carries a similar motif to that of the front grille. The taillight design is built around the high peaked and rolled rear fenders, offering the latest in backup and directional lenses.

Chrome trim of the Ford, which is the finishing touch, is placed so that it emphasizes and in the same adaptation, enhances the styling highlights. Massive chrome areas are used to full advantages around the shapely wheel openings and in convexed fender areas. The side trim itself pulls your eye along the length of the body, then is picked up again with the chrome-ribbed convex shape of the lower rear fender.

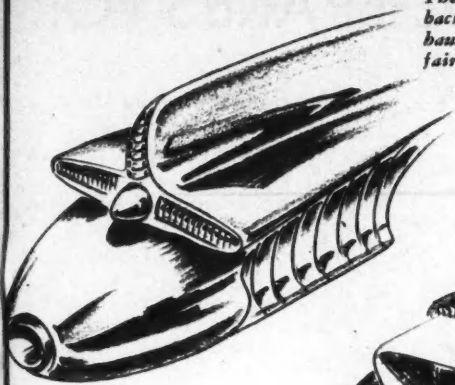
The Barris Ford is basically constructed from rolled tubing and rod, then fabricated with 18 gauge body sheet metal. Looking deep into the lines of the futuristic styling, the basic '55 Ford lines are still visible. The completed car presents a supreme *Dream Car* flavor, which to us so-called customizing bugs — is true customizing.

### PRICE LIST

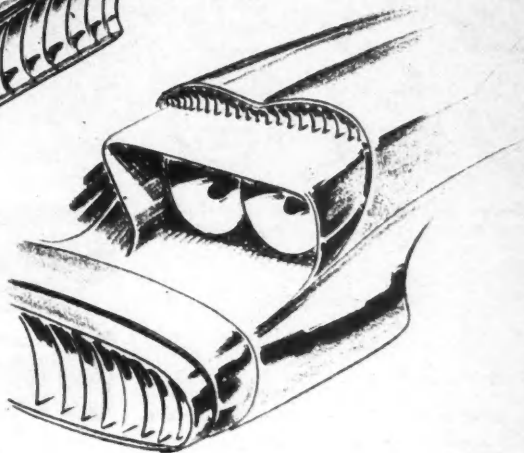
(Parts and Materials Included)

Section body	\$1,500.00
Lower Undercarriage	250.00
Chop windshield	300.00
Nose hood	15.00
Round front corners of hood	40.00
Install dual headlights with shaded lip	242.00
Build dual top front fenders — Airscoops	200.00
Fender Airscoop grilles	40.00
Special tubing grille shell	185.00
Chrome bumper bar	185.00
Special front grille	109.00
Reshape Doors	200.00
Remove door handles and install electrical push button system	92.00
Extend and raise rear fenders	1,140.00
Reshape lower rear fenders, convex and install chrome ribs	200.00
Rear fender air scoops	90.00
Special franchised taillights	232.00
Rear bumper tip exhaust	190.00
Rear bumper shell and grille	210.00
Remove deck trim and install electrical push button system	45.00
Dual purpose metal top	750.00
Rear plexiglass window	600.00
Front removal plexiglass top	300.00
Chrome rear fender side trim bands	236.00
Chrome rear fender side trim bands	100.00
Special hub caps	100.00
25-coat two-tone paint job (optional in gold rust or platinum dust)	275.00
	<hr/> \$7,826.00

*The special taillights incorporate unique backup and directional lights. The exhaust tips are housed in large chrome fairings that blend with fenders.*

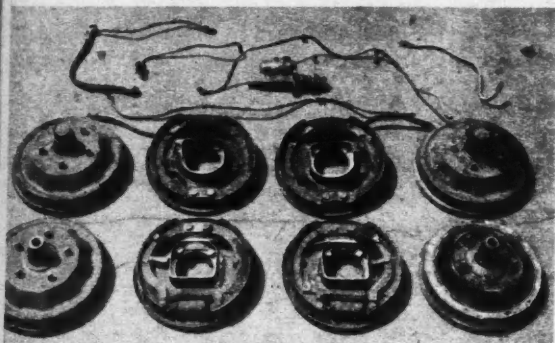


*Dual headlights are not too distant for standard production cars. Note small air scoops built into fenders.*



*The rear end styling harmonizes with front grille design. License plate is recessed into the rear grille work. Note relationship between the component's contour.*

# HYDRAULIC BRAKES FOR



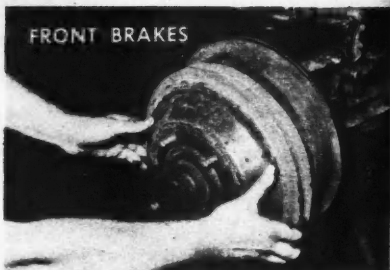
*Entire hydraulic brake assembly from a '40 Ford pickup was used to outfit 'A'.*

Photos by Bob D'Olive

JUNE AND JULY ISSUES of CAR CRAFT carried stories on the installation of swing pedals for early Fords, hydraulic clutches for early Fords and late style hand brake for that same car. We couldn't have stirred up much more action had we rattled a hornets' nest with a baseball bat. Seems as though there are still a raft of Fords running around that were built before 1939 when Henry started putting juice brakes on them. The customers all wanted to know how to replace the early Ford mechanical binders with the hydraulic type. We scouted around, found a guy getting ready to do the job and then stood by with a camera.

Several automotive specialty houses such as Ansen Automotive at 6317 South Normandie, Los Angeles, prepare hydraulic brake kits for early Fords that bolt right on in place of the mechanical setup. Hydraulic wheel cylinders are adapted to the mechanical backing plates and the original drums can be used. Another switchover method that has been used widely is to use '40 or later Ford brakes and adapt them to the early axles. A number

*complete photo story showing how to replace troublesome mechanical brakes with hydraulics*



FRONT BRAKES

*Off with the old mechanical drums as the conversion to hydraulic brakes begins.*

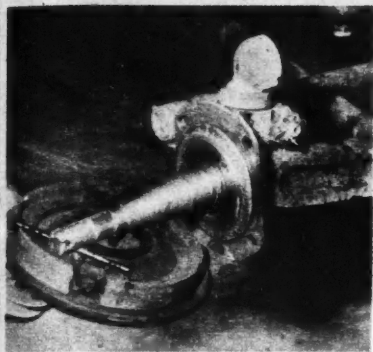


*Four backing plate bolts inside grease baffle are loosened, plate then removed.*

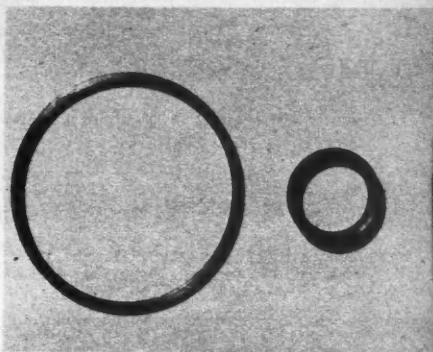


# R EARLY FORDS

by Ray Brock



*With old mechanical brakes and linkage gone, '30 spindle is ready for hydraulics.*



*These two adaptor rings are needed for each front spindle to make hydraulics fit.*

of problems are encountered using the latter method but the finished job rewards the car owner with larger brakes than the reworked mechanical method. Either method is good.

Probably the most difficult 1929 to 1938 Ford to fit with late hydraulics is the Model A produced in '29, '30 and '31. Since this model presents the most problems, we chose a 1930 A to do the conversion on. The brakes we used came from a 1940 Ford.

The first move was to completely disassemble and rebuild the brake assembly. We installed new wheel cylinders, new linings and turned the drums to true them. The old master cylinder had rust spots so it was discarded in favor of a new one. If the condition of the cylinders isn't too bad, kits are available for rebuilding them at a substantial saving. New hoses and steel lines were used throughout to make sure that dirt or weak spots would not be present in the hydraulic system.

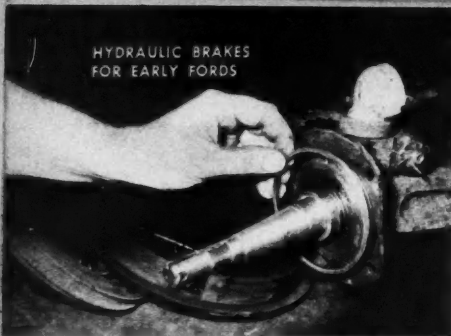
Only two problems were encountered on the rear brakes. One was the need for an axle shim on each axle taper so the drums would be spaced out the fraction of an inch needed to give clearance between the drum and the

backing plate. The other was the need for a notch in the rear backing plate to clear a corner of the rear spring perch forging.

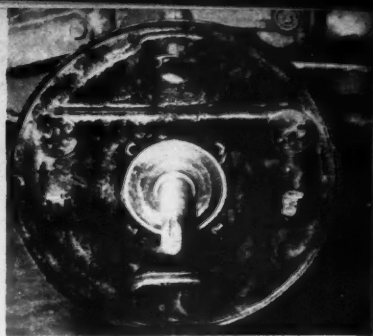
On the front brakes, two special spacers are needed to make the '40 backing plates and drums fit. One is the same thickness as the backing plate and 3/16 inch wide to make up the difference between the A backing plate register on the spindle and the larger hole in the center of the '40 backing plate. The other spacer ring is used to replace the grease seal ring on the A spindle. The early ring slides off and the other is used to space the bearing correctly for drum clearance and also for the grease seal in the '40 drums to seal against. At this point, we'd better point out that grease seals in all four drums should be replaced unless they are in good condition. Grease on brake lining can ruin an otherwise good brake job.

That's about all there is to it. Just follow the pictures, use good parts (preferably original Ford), and do a good job. All the bothersome and unsure mechanical linkage will be gone when you have completed the job and the car's new stopping ability should make you another satisfied CAR CRAFT reader.

**HYDRAULIC BRAKES  
FOR EARLY FORDS**



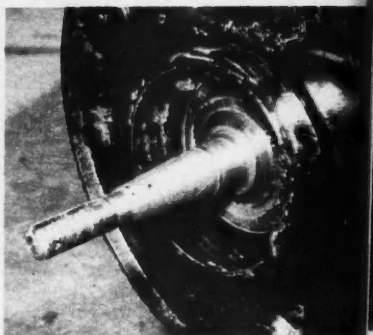
*Large adaptor ring is placed over spindle register to correct difference in size.*



*With spacer in place and '40 backing plate over it, hole misalignment is seen.*

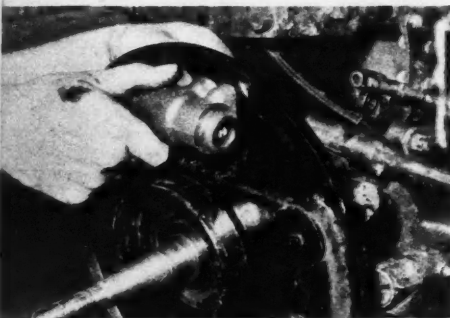


*Small round file is used to notch the backing plate to fit holes in spindle.*

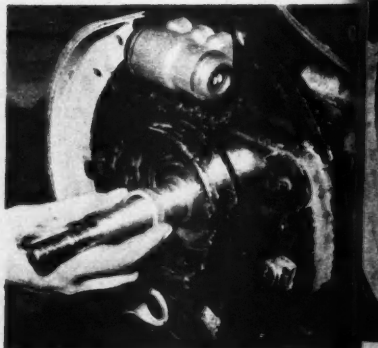


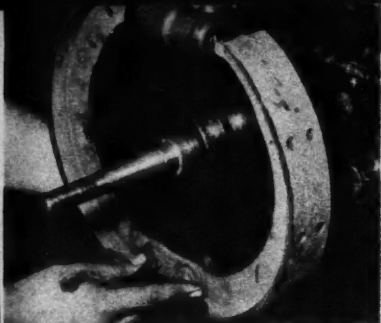
*Front backing plate is now mounted. The grease baffle holds spacer in position.*

*Wheel cylinders should be either rebuilt or new. Old cylinders can be troublesome.*

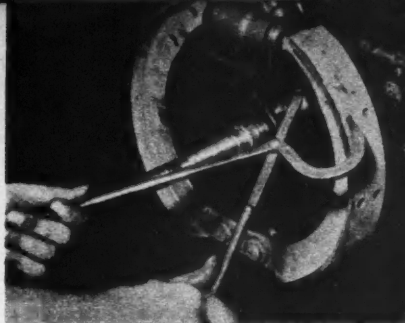


*Small adaptor ring is needed to space inner bearing and provide seat for seal.*

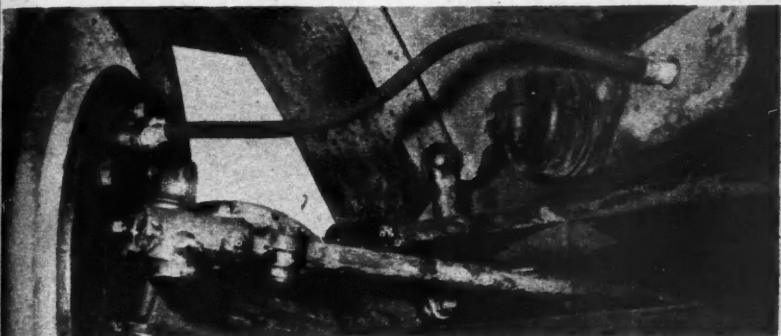




*New linings are the next step. Pick a brake lining to suit your driving habits.*



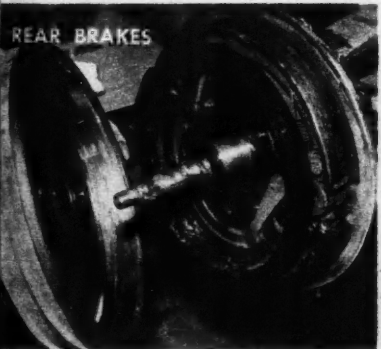
*Brake pliers make return spring installation easy. Back both eccentrics off.*



*Completed front wheel hydraulic brake conversion on '30 Ford. Brake hose anchors into frame rail in a position where it will not be hit by wheel or shock linkage.*

*Rear mechanical brake has long overlived its usefulness and is ready for scrap.*

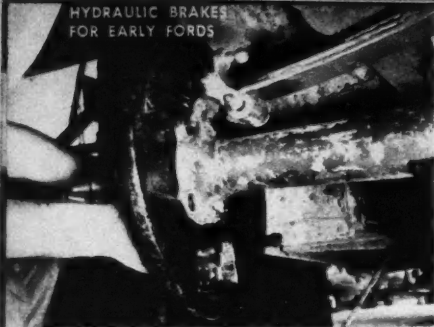
*Rear axle has been stripped of mechanical brake and is ready for '40 hydraulics.*



**REAR BRAKES**



**HYDRAULIC BRAKES  
FOR EARLY FORDS**



*Holding plate in position reveals how rear spring perch interferes with plate.*



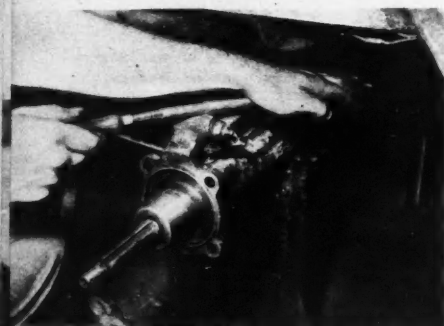
*Torch is used to cut small notch in backing plate, eliminate perch interference.*



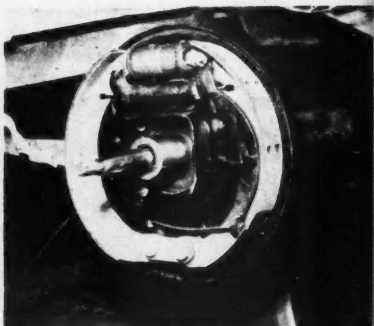
*Notched to clear perch. Bottom cylinder bolt head is thinned for clearance too.*



*Old shock bracket was eliminated to give better access to cylinder with brake line.*



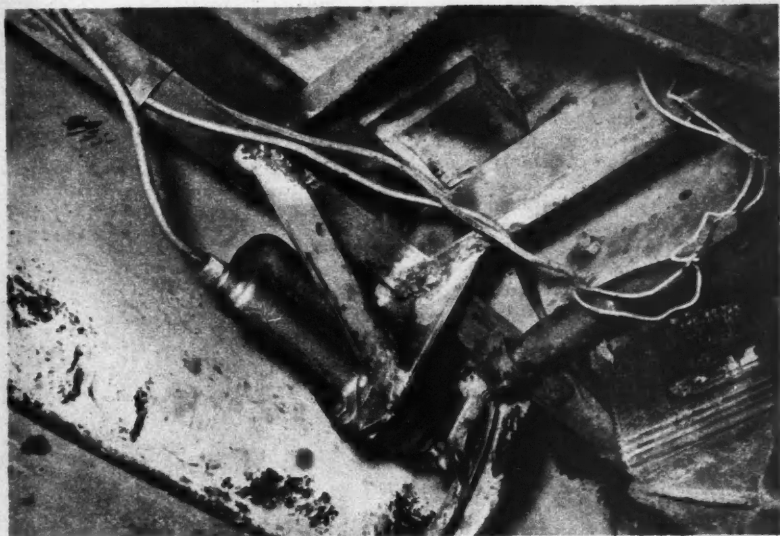
*If shock bracket is needed, round file can be used to groove for brake line.*



*Complete assembly including band brake linkage is now ready for rear drum.*



*Completed rear brake. Flex brake hose is used between axle and frame bracket with steel brake lines used to connect rear wheel cylinders to "T" fitting on housing.*



*Master cylinder is operated from revamped mechanical cross shaft. For fenderless car, cylinder should be securely bracketed up inside frame with access hole in floor.*

## STYLE REPORT:

'50-'52

BUICK

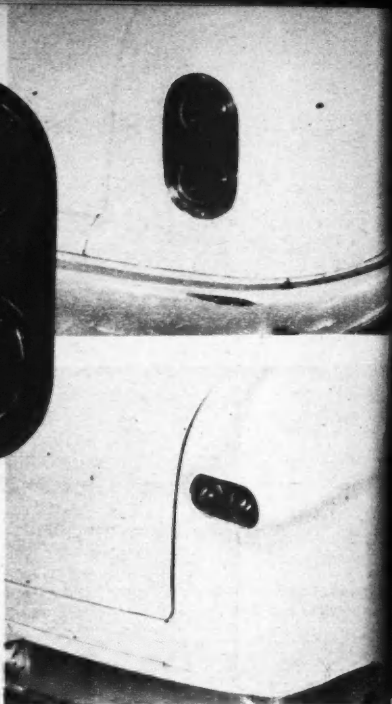
TAILLIGHT

LENSES



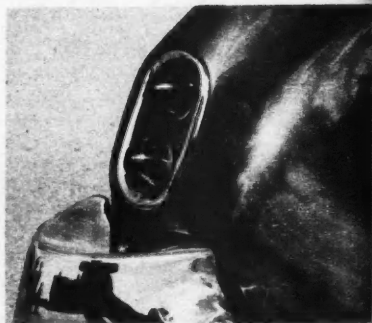
ONCE IN A GREAT WHILE a single component from one certain make of car will reach a so-called—*universal status*. What is meant by tagging the item a universal component actually points out that it can be used for restyling just about every make of car possible, and usually is! The late '54 Pontiac center grille bar is an excellent example of just what we mean. Another item that has been labeled with a universal tag is the '50-'52 bubble type Buick taillight lens.

This lens has no boundries. It can be adapted to everything from a model T pickup to the latest thing on the road. Its size is the big factor. Its compactness lends itself easily to pre-war models and for cars calling for a small lens—it can't be beat! The lens is generally frenched into the rear fenders or the lower body panels, utilizing small round rod to encircle it. The round rod gives the edge of the taillight opening a smooth, rounded contour as you will see in many of the following photographs. If you're contemplating on restyling your taillights, and happen to be in the market for a simple approach—the Buick lens is hard to pass up.



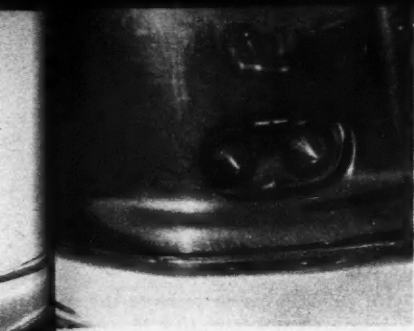
*TOP: Buick lenses have become popular items with Merc owners. Lens is positioned vertically and is frenched into fender.*

*ABOVE: '49-'51 Fords seemed to be a natural for the Buick lenses. Here you see lens installed in stock Ford opening.*



*Installation of lenses in early '46 Buick lends custom look. Tubing has been used to french the bubble lens into fender.*



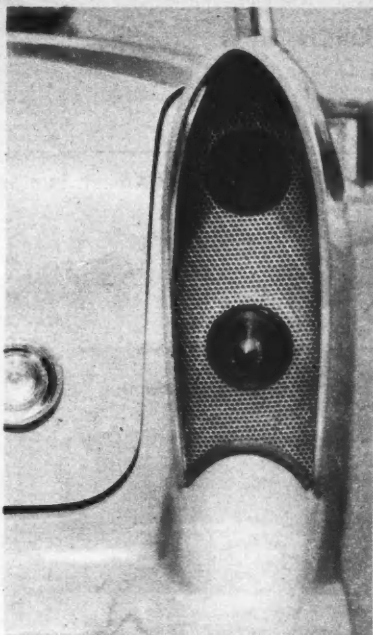


**TOP:** Here lens has been frenched into fender horizontally as compared to that of the Merc pictured on opposite page.

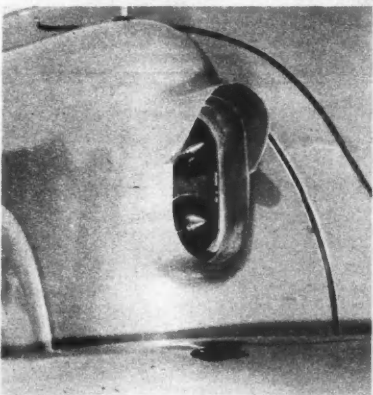
**ABOVE:** On '49-'51 Fords lens can be deeply recessed into stock openings by molding on a special sheet metal shades.



**A novel innovation is this arrangement of separating the two bubble lenses and housing them in deep recessed tunnels.**



**On this late Buick the lenses were separated and installed in fender with a chrome mesh screen facing. Note deep shade.**



**Another deep shaded example is this arrangement. Sheet metal housing was made for stock lens, then upper shade added.**

## TORCH TIPS:



the '53 Kaiser bumper guard — a natural

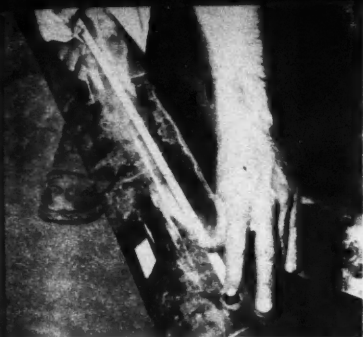


Photos by George Barris

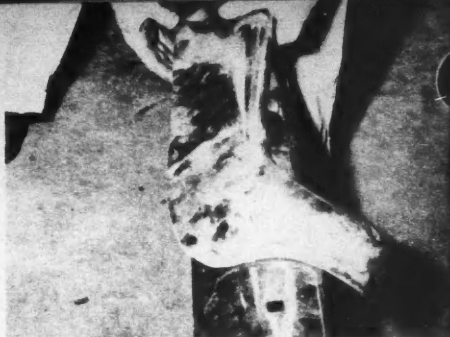
ONE OF THE biggest problems that can beset a customizer is—How to come up with a unique bumper styling? Of course the easiest route is to replace the tired, dinged up stockers with another new breed. This approach is kosher, but can easily tap the till for quite a sum. Another common theme that will disguise the original bumpers is to fill the bolt holes and remove the bumper guards. This treatment achieves a smooth custom look, but it's usually far from what the customizer originally hoped for. Another drawback with this arrangement is the lack of the bumper guards. We all know that they are just about the most popular thing around when a careless motorist finds that his brakes aren't quite up to par, or when your burning a push to the nearest gas station for some much needed petrol.

When most customizers are slaving over some concentrated thought as to what they plan to do to change the bumpers on their lil' jewel, it's almost like the old snake story—it was so close all the time that it could of bit him. Only in this case the snake in the grass happens to be—bumper guards!

There are several bumper guards of various makes at the present time that will do more for the over-all appearance of a custom car than all the bumpers put together. Take a look at the three-piece Kaiser bumper guard for instance, a more natural customizing item was never made. Not only will this component change the appearance of an ordinary bumper, but it can also be put to use as a clever bumper guard exhaust arrangement. The Kaiser guards costs approximately twenty-five dollars per pair. The story on how to assemble the two outside spinners and the center crossmember into a one piece bumper guard and install it on any bumper—with exhaust treatment optional—was twenty-five cents.



1. First remove bumper, then with ruler, measure off the center point of bumper.



2. Now take center cross over piece of Kaiser guard and center is on bumper.



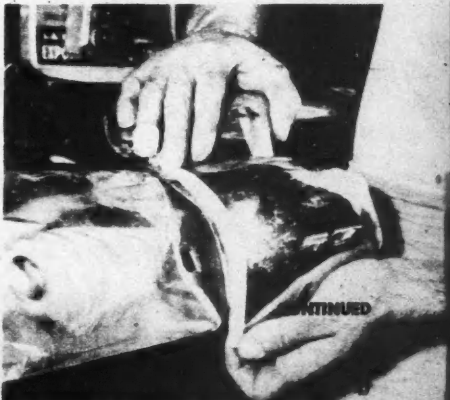
3. Carefully measure off the bolt holes of the center piece. Center punch markings.

5. After the position of center piece is determined, fit up the outside spinners.



4. Bumper is now drilled. Masking tape is used on bumper for pencil marking.

6. Place the spinner next to the bumper and then tape off the bumper's contour.



CONTINUED

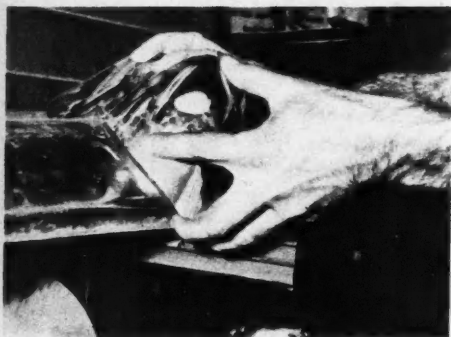
**TORCH TIPS** continued



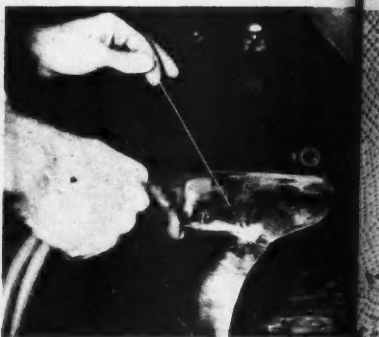
7. With tape serving as a guide, a cutting torch is employed to cut the spinner.



8. An electric grinder is used to grind the spinner's contoured edge semi-smooth.



9. Refit spinner to bumper to check out alignment. File can be used to true up.



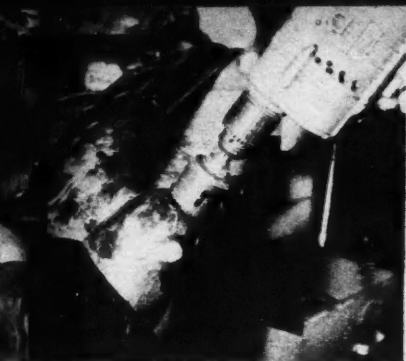
10. Once spinners fit perfectly, weld them to the ends of center cross-piece.

11. Weld beads can now be cleaned up with an electric grinder to semi-smoothness.

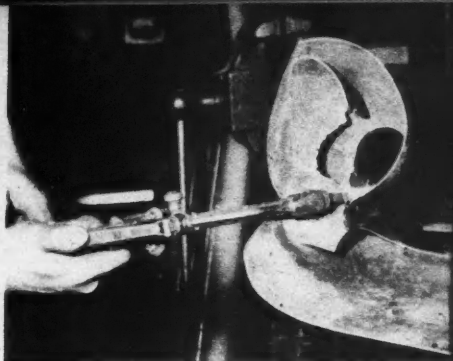


12. To put the finishing touches on the welds, smooth them out with a hand file.





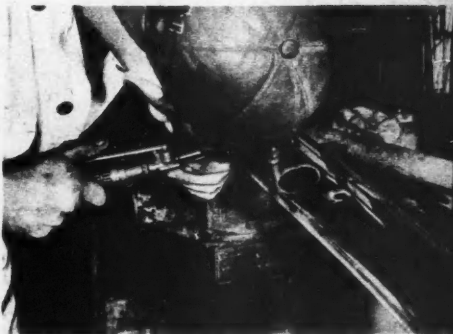
13. If exhaust tips are desired then select tip, measure diameter and drill hole.



14. Center cross-piece section interfering with exhaust tip can now be cut away.



15. With the exhaust tip opening clear, now finish off edge of opening with file.

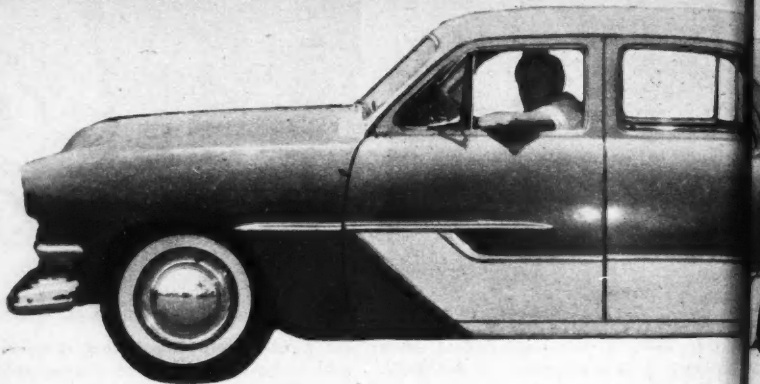


16. Re-position guard and mark off bumper for exhaust tip. Cut hole with torch.

17. Guard is now bolted to the bumper and the exhaust tip alignment checked out.

18. Exhaust tip merely fits into guard, is not welded solid. Note pipe routing.



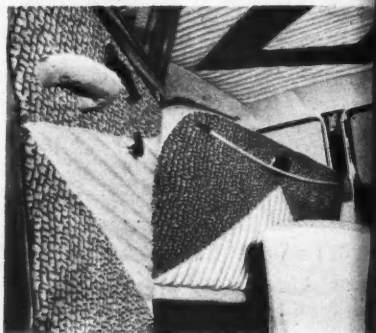


# It's a F-F-F-O-O-R-

*Interior upholstery consists of Ice Pink fabric combined with White Naugahyde. The design motif is diamond shaped. All interior trim has been chrome plated.*

Photos by Dick Day

**BELOW:** Grille bar is from '54 Pontiac. Hood has been nosed and center front edge of the hood has been filled. Top grille bar is from '51 Ford. Above side view displays unique two-tone paint job.





*minimum modifications  
and inexpensive customizing  
rounds this '51 Ford four-door  
into a shining showpiece*

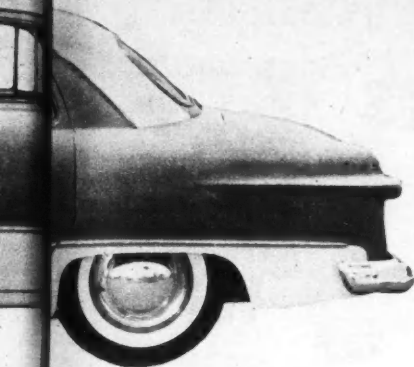
IT'S NOT OFTEN we come across a four-door custom, and it's really a rarity to find one as clean as the spotless '51 Ford belonging to Darrell Schenerman. Darrell came up through the channels much like many of us; observing custom cars whenever possible, and "nosing" just about every magazine published for the automotive scene.

He confesses to buying the four-door for two very important factors. First, this model proved less expensive than other popular models such as club coupes and two-door sedans. The other reason was that the four-door was an unorthodox approach, offered a challenge for ideas.

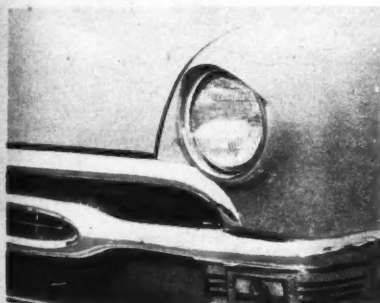
Stylers Custom Shop of National City, California, was elected for the restyling capers. The first job was removing the stock grille bar and replacing it with a '54 Pontiac center grille bar (see CAR CRAFT, October '54 Torch Tips). The headlights were frenched to the fenders by using '52 Ford headlight rims, then small sheet metal shades were added at the top of each rim. The next major alteration was the taillights. Stock lenses were removed and the housings were flared out and made slightly larger to accommodate '50 Buick lenses (see page 44). All stock trim from both, hood and deck lid, was removed. The side trim was restyled by using late Plymouth rub strips which offered a unique two-tone painting arrangement for the four-door Ford. The exterior consists of a wild Tropical Rose color combined with Polar White.

For you readers who have been writing in for four-door car features, Darrell's little job should be quite informative from all angles. The over-all styling definitely offers above par ideas.

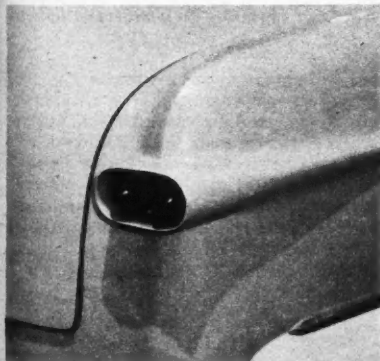
*Stock taillight housings were enlarged slightly to accommodate '50 Buick lenses. The deep tunneling of the taillights was accomplished with sheet metal shades.*



R-R-D-D



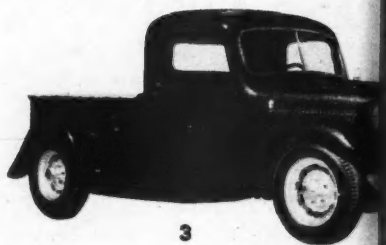
*Headlights were frenched by using '52 Ford headlight rims. Special headlight shades were made from sheet metal.*



## GRAB BAG:

# TRICKS

# WITH



**THE BIG RUSH** to pickups within the past few years is, of course, due primarily to the increased passenger capacity and subsequent adaptability to the family man for a second car as well as a possible must for whatever business he might be in. And since the dual purpose utility model has more or less forced itself upon us, it naturally follows that many a custom trick would pop among the breed.

The first thing that must be decided by the trucker is whether he wants his wagon to hold to the functional side or become a real Fancy Dan, with pleated tarp, custom interior and a wild array of Von Dutch stripes. One point of advice on tarps — use only the latest material (2-ply Lederman's plastic, Sport Top material 2-ply Naugahyde) or an identical product that can be easily cleaned of almost any soil marks. The product is good looking, flexible, and resists penetration of liquids.

A few fine points now regarding the proportions and general appearance of your truck. Never drop the back of the chassis lower than the front. It has a tendency to make the truck appear miles too long and completely out of proportion. Even a level attitude is not recommended. Best the back set at least three to five inches higher than the front to give proper rake. Remember, that if a tail pan is used below the bed, the lower the rear bumper position, the deeper and more awkward the

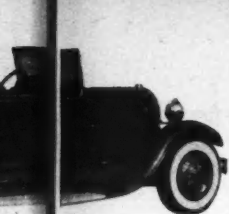
by Bob Greene

1. One fine 'forty is Bill Jaques', with chromed grille, 15-inch wheels, exhaust stacks, De Soto bumpers, and flawless body.

2. Model A roadster pickups are almost extinct. 15-inch wheels and immaculate paint can obviously do wonders with these.

bed will appear when viewed from the rear. Make sure your bumper position is aesthetically correct and doesn't interfere with tailgate action, before buttoning it on for good.

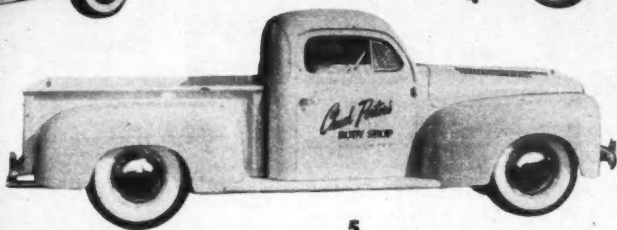
If your newly acquired pickup is an older model, say, 1934 or earlier, it will probably be devoid of bumpers, and here is an opportunity to build up a nice set of tube nerf bars (they look especially good on the ancient models). Between '35 and '49 Model Fords,



2

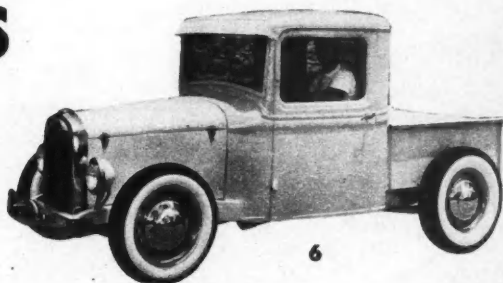


4



5

## TRUCKS



6

3. Chopped and sectioned '37 represents much work, gives one-of-a-kind effect. Note altered trim and roll on fenders.

4. If you want to go the route with paint and chrome; bumpers, running boards and wheels brightened; striping by Von Dutch.

5. Chopped, channeled and sectioned '49. Don't go for it unless you are a man of many talents. Complete bed is hand formed.

6. You name it — 'pears to be '32 Ford cab with "A" radiator shell and home-made bed. It's fun to build an eye-catcher.

'39 Buick or '41 Ford stock bumpers, or ones of that type, are equally suitable.

Taillights are probably one of the most distinguishing features, and the wide variety shown on these pages may offer a clue to what you are looking for. In any case, keep them fairly large and strictly functional.

Hold the use of chrome down, making it accent rather than dominate the body. Running boards look flashy plated or in bright

colors, but black is never out of place here and, besides being easy to touch up, shows less wear and tear from the foot traffic in and out of the cab.

Otherwise, let your conscience be your guide. There are very few holds barred in this truckin' game — and therein lies the attraction! On the following pages you'll find the cream of CAR CRAFT'S crops — Truck treatments galore.

continued

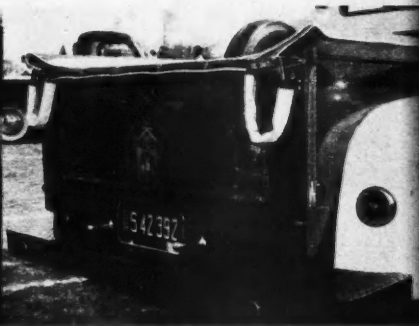
## GRAB BAG:

CONTINUED

*Chuck Porter started from scratch, built his own new aluminum bed. '40 Chevy taillight lens set flush, and '40 Ford bumpers enhance appearance.*



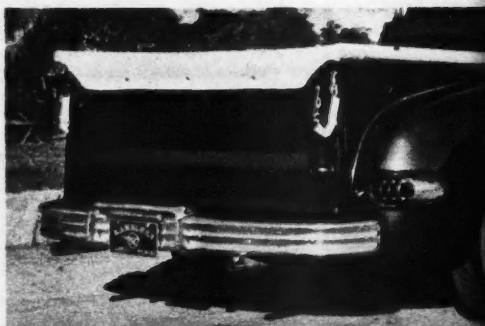
*A '37 Ford with special bed, Buick taillights, molded gravel pan, '42 Ford bumper. License light incorporated in pan.*



*An unusual combination of utility diamond plate steel bumper and trip-to-Mars striping. '50 Pontiac license lights are used.*

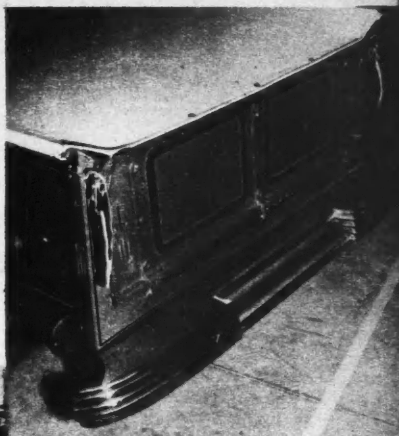
**NEAR RIGHT.** Late model Chev using Chrysler product bumper and '49 Stude taillights recessed in fender. Note the adaption of Chev license guard.

**CENTER RIGHT,** and still different is this Chevy with hammered smooth tailgate, low and unusual utility type bumper. Note the small reflectors that are pressed in bed railing tips.

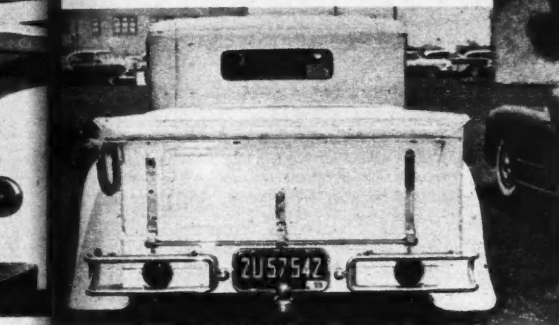




**LEFT,** those non-functional Buick port holes have finally been put to use in this bumper as exhaust tips. Note gravel pan.

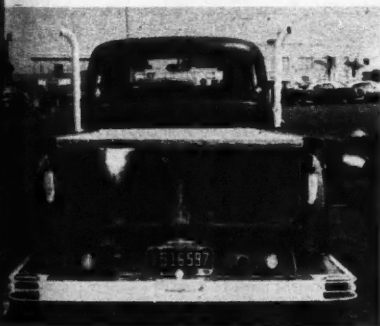


**ABOVE.** This '34 Ford is equipped with a De Soto bumper that has been sectioned in the center. License plate can easily be fitted in this section. Lights are stock accessory items.



dis-  
Mars  
used.

'34 and earlier Fords look sharp with nerfing bar bumpers and chrome plated bed hardware. Shallow tail pan accents width.



Popular '40 Ford with a different treatment; '42 Ford lights in fenders, and no tail pan. Bumpers are 1941 Ford models.

## GRAB BAG:

CONTINUED



*Chuck Porter's truck has been completely filled in up front with the headlights and grille slightly recessed. The grille bars are made from flat stock iron, then chromed.*

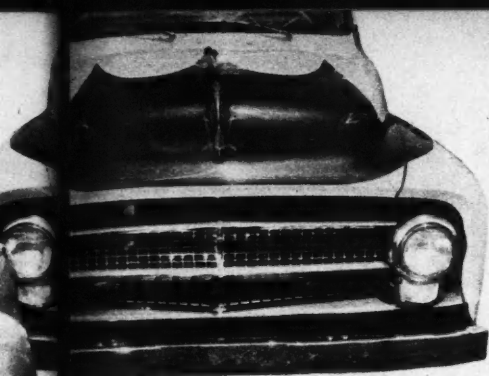


*Frank Benson achieved bulky appearance by painting off chrome and chopping top. Headlights are deeply frenched. Note late Plymouth bumper.*

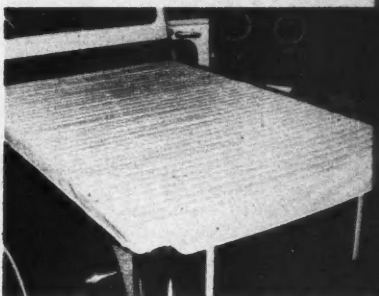
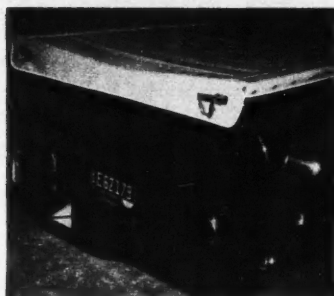
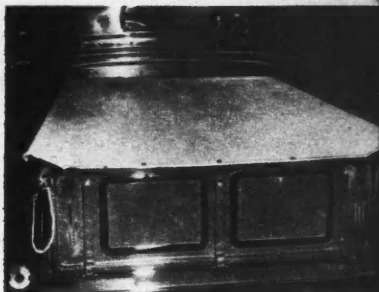
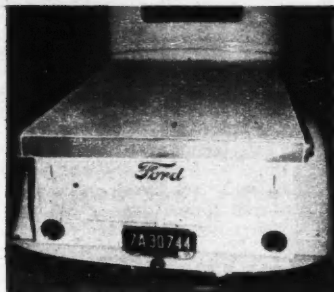


*Just about the cleverest grille we've seen in sometime is this Ford with a '55 Chevy grille and '54 Buick headlights, doors.*





*Gaylord's truck grille is made up from a '55 Ford parts. Grille is merely contoured to headlights. Note Von Dutch striping.*



#### TOP

*Tarps are basic in design, but here are four that have that added touch. Here, tarp carries over edge of truck bed giving uncluttered appearance.*

#### TOP

*Here is typical tarp design. It is completely opposite to one pictured at left. Material has been brought out only to the edges of the bed and gate.*

#### ABOVE

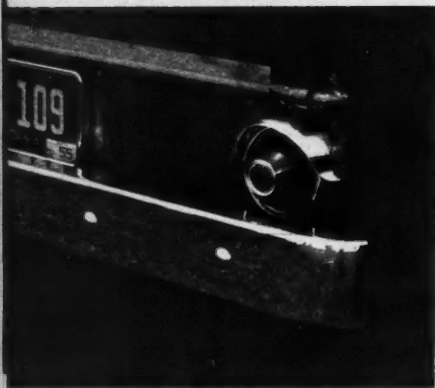
*A little added touch to the rear of the truck is to have the tarp contour, and slip over the tailgate locks. This lends a dressed appearance to the rear.*

#### ABOVE

*The extreme approach to tarp design would be this example. Tarp has been completely pleated. Tarps of this type are usually made up for shows.*

## GRAB BAG:

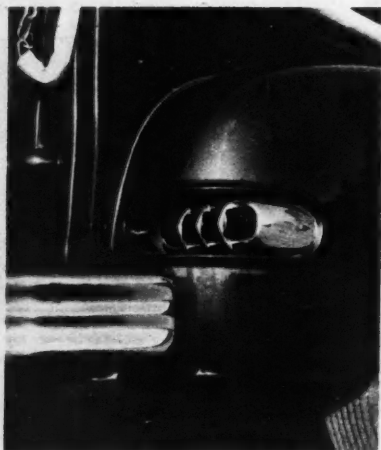
CONTINUED



*Round lense, large or small, blend well with oblong, box shaped pickup beds. Here, late Pontiac lens has been installed.*



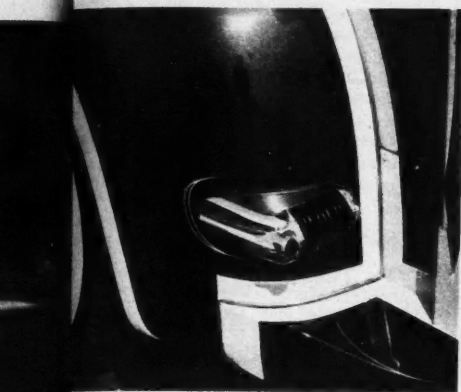
*Another clever taillight installation is to mold '39 Chevy bullet-type taillights to the lower side of the pickup's bed.*



*Frank Benson solved his taillight problem by deeply recessing '48 Studebaker lights and chrome housings into rear fenders.*

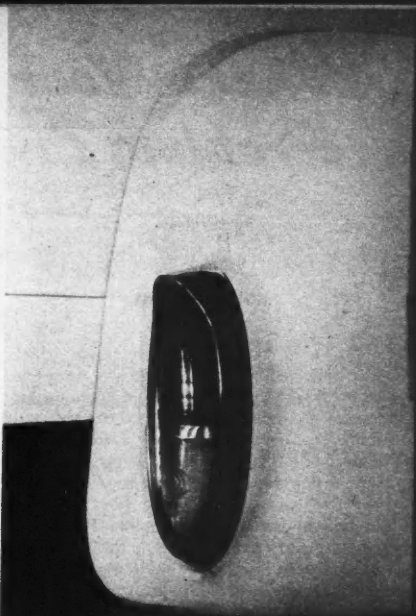


*On '39-'40 Ford trucks, '48 Ford taillights adapted in a vertical position work well. Any flat lights prove to be naturals.*



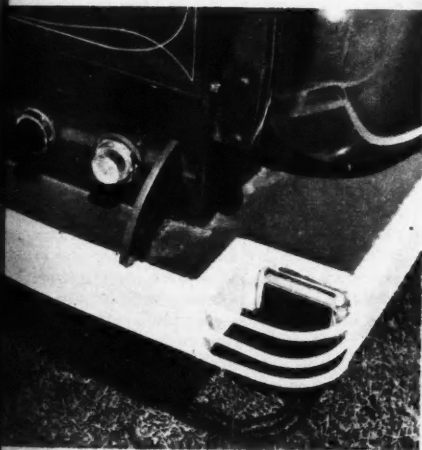
*Gaylord's truck taillights consists of late Chrysler components. The chrome light frame matches fender perfectly.*

on is  
lights  
bed.



*The late '53-'54 Chevy housing and lens make a nice setup with the late Ford truck fenders. Taillight is merely bolted to the face of the fender.*

*Another custom approach for late pickups is to tunnel Pontiac lights deep into the fenders. Any round lens will give same appearance.*



*Unique arrangement is to encase the tail-light in a special pan as this example shows. Note turning lights installed.*

lights  
well.  
rals.



NOVEMBER 1955

RAFT

XU

# "What's Your Problem?"

by Ray Brock

## NOW HEAR THIS!

Dear Ray:

I own a '54 Ford Country Sedan which was delivered to me with a 3.54 rear end and 7:60x15 tires. The engine doesn't seem to peak up, nor for that matter perform as I think that it should at any speed. I have always felt that it required a good tune-up with a few tricks. I have had tune-ups made, but I've come away feeling like they performed a comedy of errors. So I am now determined to get all the dope that I can and do it myself.

I have been given a great deal of contradictory dope on valve-lash-settings, such as tightening, loosening, or leaving them at factory settings, so I'm looking to you to furnish me with the final answer. I've always been under the impression that a tight valve lash setting will allow an engine to breathe better resulting in a higher available RPM, but at the same time, low engine RPM torque is sacrificed and that the opposite is true with a loose setting. Am I correct? Could you also furnish me the effect on engine wear and economy at these different settings?

There are a number of sailors on this ship, including myself, who would very much appreciate your answers to these questions. It's pretty difficult keeping your magazine in circulation, even out here in the middle of the Pacific Ocean with everybody hoarding and/or clipping them so as they will be sure to have the straight dope when they get back and begin playing with their cars.

Respectfully,

John R. Simmer ETC, USN  
U.S.S. Philippine Sea

*Don't forget that your four-door wagon is a pretty heavy piece of equipment and a 3.54 ratio with 7:60x15 tires adds up to be a pretty healthy gear to pull.*

When using a stock cam, you really have only one alternate adjusting method. Stock adjustment clearances are set as close as possible to eliminate tappet noise while still insuring proper seating. The duration can be shortened by increasing clearances and better low speed performance might result but noise will also increase. If the adjustment is set closer than stock with the stock cam, chances are that the cam ramp is such that little duration increase will result although there will be slightly more lift. We suggest factory recommended clearances for stock cams.

## OLDS — FORD CONVERSION

Dear Ray:

I have a '40 Ford and would like to know what changes would have to be made to the transmission and rear end if I installed a '50 Olds engine? I was told that the rear end would have to be replaced and if that is so, what would you suggest as a replacement? Concerning the transmission, would you suggest a stock '40 with Lincoln gears?

What size tires would you suggest for the rear wheels? Also what about the radiator? I have just (8 months ago) replaced the engine with a '40 block bored to Mercury and have been having overheating trouble. I would not want to go through the same thing with the Olds engine if I install it.

Sincerely,

Don Fitzpatrick  
New Orleans, La.

*There is nothing wrong with the Ford transmission provided fast clutch-offs and speed-shifts aren't used recklessly. The Ford rear end has a long record of having been used behind big powerplants and the only changes that might be necessary would be in gear ratios. Big tires are often used on the rear to give more gearing but a much more suitable method would be to select a ratio of around 3.54 to 1. If Zephyr gears are used with the bigger ratio rear end or with big tires, chances are you will have an overgeared condition while starting and especially so if you should often have to start on steep grades. You should have no heating problems with the Olds engine as overhead valve engines usually run cooler than L head engines. Several companies make adaptors to fit the Olds engine to the Ford trans and special ratio gears as low as 3.27 can be bought from A. J. Getz of 4430 Carrollton Ave., Indianapolis, Indiana.*

## OVERDRIVE FOR EARLY FORD

Dear Ray:

I have a '47 Ford 2-door sedan with a '51 Ford engine. It is a stock engine, but it seems too much for the transmission. I have been thinking of putting in a later model transmission and differential, such as, a '49 Ford or Mercury transmission (overdrive) and differential.

Will they fit in my car without too much work and expenses?

Thank you,  
John Bawland  
Wilmington, Ohio

The '47 Ford transmission is practically the same as the '49 Merc and definitely buskier than '49 Ford. Your transmission—differential combination is probably much stronger than late Ford but there is no overdrive unit available except Columbia's two speed axle. If you use late Ford or Merc transmission with O.D., you have the problem of either adapting a shortened torque tube to the rear of the O.D. or putting a late style Hotchkiss drive rear end under your car. Both changes would present numerous problems but adapting a shortened torque tube to the rear of the O.D. might be less difficult.

## RESTYLING INSTRUMENT PANEL

Dear Ray:

I would like to install a round speedometer, fuel and temperature gauges in my '46 Hudson Super Six. Those used in '49 Mercs or one of the later model Plymouths suits my fancy. Would the gauges be accurate? Any help you can give me would be greatly appreciated.

Sincerely,  
Elmer Feldotto  
Paullina, Iowa

The gauges would be accurate if the sending units designed for them were also used and wired correctly. All speedometer dials are calibrated to register at 1000 revolutions per mile so this too should be correct if the proper speedometer pickup gear to fit the differential ratio is employed at the transmission. The gas tank pickup might work as is or if not, could be mentally calibrated so that you could tell how much fuel you had.

## FOR SALE: "THE DRAGON CUSTOM"

'55 Buick Century. Stick shift. Skylark wire wheels. Custom body, and paint, special Gaylord interior. Price reasonable, make offer.

WRITE: PH. TO 7-3058

MERLIN WINDHAM

14702 Betty Jean Ave.  
Bellflower, Calif.



## Free "Soup-Up"

Big Automotive Power, Mileage, Style!

THOUSANDS of new speed, power, safety economy saving and custom equipment—all can Power boosters, superchargers, dual carburetors, manifolds, heads—also, dress-up accessories. Now low factory prices. FREE personal instruction. Write today to ALMQUIST ENGINEERING, Dept. CE11, Moline, Penna.



## HYDRAULIC CLUTCH SLAVE CYLINDER KIT!

For use with swing pedal installation. As featured in June '55 Car Craft.

Complete Kit, Postpaid.....\$15.00  
Bracket fits '32-'39 Fords only.

'39 Ford or later Kits, less bracket, Postpaid.....\$12.50  
Write or Call: SY 2-9378

**TIM'S** PRECISION ENGINES, 733 Arroyo Parkway, Pasadena 1, California

Make money!  
**ADDRESS and MAIL POSTCARDS at HOME**  
Write today!  
MR. KAY, BOX 14 BELMONT, MASS.

## COMING NEXT MONTH

How to make a plaster

female mold for fiberglass car bodies.

**DON'T MISS IT!**

# INTERNATIONAL MOTOR REVUE IS HERE

**SPECTACULAR CARS** to suit the most exacting tastes of automotive enthusiasts are being exhibited at the 6th Annual International Motor Revue in the Pan Pacific Auditorium in Los Angeles from October 14 through October 23.

In the roster of more than 100 show vehicles are many of the most outstanding custom cars, hot rods, competition machines, sport cars, foreign cars and cars of the future from Detroit.

Visitors from at least 20 states are expected to attend this exposition, which is the largest and most successful show of its kind in this country.

Show headquarters are located at 5959 Hollywood Blvd., Los Angeles 28, Calif.

## LEFT SIDE EXHAUST SYSTEM, \$11.95

Complete with clamps, etc. (less mufflers).

Same with one muffler.....\$17.35

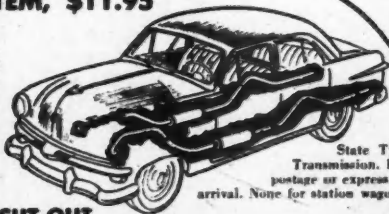
Same with two mufflers.....\$21.75

Choice of glass or steel-packed mufflers.

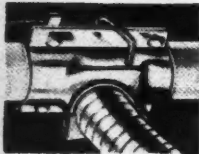
'50-'51 Cad • '49-'55 Olds • '51-'55 Stude •

'53-'55 Dodge • '55 Chevy • '55 Pontiac •

'35-'55 Ford or Merc • '53-'55 Buick.



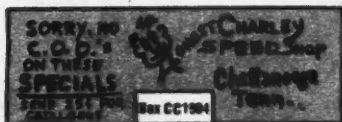
State Type  
Transmission. Pay  
postage or express on  
arrival. None for station wagons.



### EXHAUST CUT-OUT

Fits any exhaust  
pipe, any car. Dash  
control kit is  
included.

**SEND \$3.95**  
ppd.





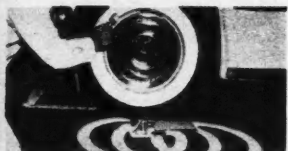
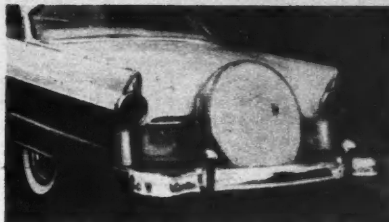
# AUTO DISCOUNT *specials of the month*

## STANDARD AND DELUXE CONTINENTAL KITS

Complete with all parts for easy installation. Specify make, model, year of car, and tire size.

Std. Kit—Item #18	Deluxe Kit—Item #20
49-55 Ford, Chev . . . \$41.95	49-55 Ford, Chev \$ 79.50
53-55 Pont. . . 48.50	53-55 Pont. . . 79.50
54-55 Olds . . . 54.50	53-55 Merc . . . 79.50
54-55 Buick . . . 54.50	53-55 Ply, Dodge 89.75
1955 Merc . . . 54.50	53-55 Olds . . . 99.75
1955 Ply . . . 54.50	51-55 Buick . . . 99.75
53-55 Line . . . 49.50	52-55 Line . . . 99.75
	54-55 Cad . . . 109.75

Chrome tire cover rings optional—add \$10.00  
All prices 30% to 60% below regular retail prices.



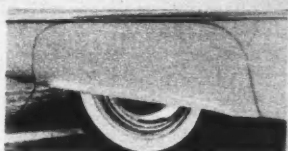
### DELUXE WHITE SIDEWALL KIT

Sidewalls in colors to match or harmonize with any car! These 100% latex rubber Kolorwall and Whitewall rings come in sky blue, dazzling yellow, sea-foam green, shocking pink, or gleaming white. Apply on any 15" or 16" tires (specify). Super deluxe do-it-yourself kit with 4 Kolorwall rings, \$11.95 (with 5 rings, \$13.95). Kit with 4 Whitewall rings, \$9.50 (with 5 rings, \$11.50). Specify kit desired. Item #30



### HEADER SETS

Item #4E
37-53 Ford & Merc . . . \$30.95
41-54 Chev (except conv.) 22.95
Item #5E
54-55 Ford & Merc . . . 29.95
Item #6E
49-55 Olds V/8 49.95
51-55 Stude V/8 . . . 49.95



### SUPER DELUXE PLANS POWDER SKIRTS

All of heavy-gauge steel, with concealed rubber liner. A clock to install. Lever locking. Primed for finish paint. Available for (specify):

38-55 Ford	35-54 Pont	35-41 Buick
39-54 Merc	35-52 Dodge	50-53 Buick
38-55 Chev	35-54 Ply	35-55 Nash
35-53 Stude	35-54 De Soto	33-55 Willys
35-54 Olds	35-54 Chrys	46-48 Kaiser

Deluxe Skirts: \$11.95 (reg. \$17.50) Item #7E  
Levered Skirts \$16.95 (reg. \$25.55) Item #8E  
Std. Skirts: \$6.50 (reg. \$11.50) Item #9E



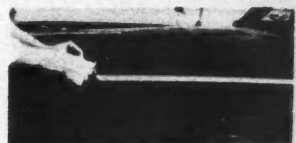
### NEW FIESTA WHEEL DISCS

You asked for them—and here they are! These discs are original factory duplicates of the '55 Olds Fiesta discs! They're made of heavy-gauge steel, with triple-chrome finish for lasting luster. Fit all 15" and 16" wheels (specify), and they have special sure-stay grippers—there's no chance of losing them. Only \$34.95 for the set of four—a regular \$60.00 value! Item #10F.



### BLEC TRUNK, HOOD KIT

Open trunk or hood by pushing a dash button with this easily installed kit. Comes complete with Solenoid, cable, wire, push button switch, all needed screws, etc. Specify trunk or hood kit. Item #11B  
Trunk or Hood Kit: \$8.75 (Regular Price: \$9.95)



### CHROME METALLIC TAPE

You can add many effective styling touches to your car with this handy tape. Genuine chromium finish will hold up for years in any kind of weather. It protects as well as beautifies. Pressure sensitive—easy to apply on any smooth surface. Holds fast, but you can remove it without damaging paint whenever you wish. 1/4" wide, 40 feet long. \$3.45 Ppd. (reg. \$4.00). Item #12B.

Send full amount and we pay postage on items marked Ppd.; others FOB Los Angeles. 25% deposit on COB's. All items Money-Back Guaranteed.

**ATTENTION: AUTO DISCOUNT CARD HOLDERS** Don't forget to take your additional discount on per the code in item numbers above. For example, Item #7E (Fender skirts) means you are entitled to additional discount "E" listed on your discount card when you purchase this item.

**IF YOU DON'T HAVE AN AUTO DISCOUNT CARD**, you are losing money! Your Auto Discount Card entitles you to additional discounts on leading products. Check the proper box on the coupon, enclose another dollar (\$1.00), and you'll receive your Discount Card and additional savings on this order as well as on future orders.

## AUTO DISCOUNT CO.

1529 C-11 VICTORY BLVD.

GLENDAL 1, CALIF.

Auto Discount Co., 1529 C-11 Victory Blvd., Glendale, Calif.

Please rush me the items circled:

1E 2G 3C 4E 5E 6E 7E 8E 9E 10F 11B 12B

My car is: Make \_\_\_\_\_ Year \_\_\_\_\_ Model \_\_\_\_\_ Trans \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

☐ Full payment enclosed; \$ \_\_\_\_\_ (Calif. buyers add 3%)

☐ \$ \_\_\_\_\_ deposit (25%) enclosed, balance COD.

☐ Send Discount Card (\$1.00 enclosed), and give me extra discount(s) on above order.

☐ My Discount Card is Number \_\_\_\_\_ I have taken my additional discounts on this order.



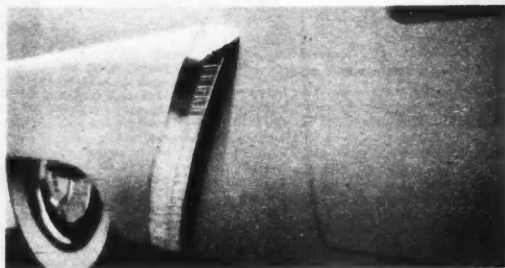
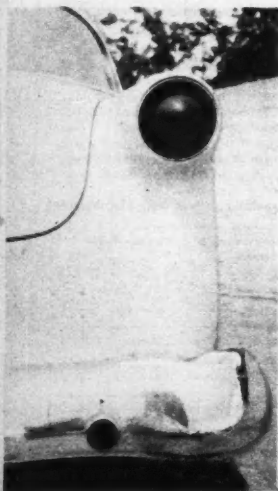
## MAIL BAG CUSTOM

### CUSTOMIZED SCHOOL TEACHER

**T**HIS MONTH'S "Mailing Custom" proves that things in the custom world are looking better everyday. If you don't think so—then try this example for size. How would you like your first period school teacher to be none other than a died-in-the-wool custom car owner? "Impossible" you say—not at all. Exhibit "A" is a young Azusa, California, teacher who is the proud owner of a fine '52 Ford custom with all the trimmings—even a *frenched in dome light!* Owner Leslie Shuck explains that the car was held to a conservative nature because of necessary travels connected with his work, but between his own ideas and those of Dale's Body Shop of the same area, the car was restyled around functional lines, with a well balanced styling achieved.



It's hard to paint a true picture of what happens every morning at eight o'clock when Les pulls his little job to a halt in the faculty's parking lot, but we'd guess that he gets the once over by the local English and Biology mentors. And can you imagine what "after class detention" means with his youthful group—a flat out bench racin' session. At any rate, a school teacher with a frenched-in dome light deserves the best—and our hats are off to him.



Air scoops have been built into the rear fenders along stock vertical trim line. Grille consists of '53 Chevy components. Parking lights are special-made with frosted lenses. All trim such as door handles and nose and deck ornaments have been removed. The doors and trunk are now operated electrically from push buttons inside car.

Headlights and taillights have been frenched to fenders by using the stock rims. Taillight lenses are from late Olds. Exhaust tips were molded through stock bumper.

# BRAND NEW NOVELTY SENSATION!

"Round the World"

## CAR PLAQUES

Personalize Your Car with  
the Glamour and Intrigue  
of the World's Most  
Exciting Places!



ACTUAL SIZE 6" x 4"

- \* THICK CAST ALUMINUM \* BRILLIANTLY POLISHED
- \* RAISED LETTERING AND DESIGNS

## Swing 'em or Mount 'em ...Paint 'em if you like!

Get a load of these authentic club-type plaques with a fresh new twist! "Round the World" Car Plaques give your car a brand new kind of custom appeal: the glamour of one of the world's most exciting places—the enchantment of a far-away land—or a real-gone name with hot-rod symbol!

Like the intrigue of far-away places? Choose the Rickshaws of Tokyo or Yukon Drifters, Alaska.

How about an exciting, glamorous place here in the U.S.? Tell the world you're one of the Gamblers of Las Vegas or a "Custom" from Hollywood.

Prefer a chuckle? Hang a Sinners plaque on your car—or be a Rod Bender!

Here's the biggest novelty sensation since the early '30's, when state laws brought an end to the foreign license plate craze. "Round the World" plaques are even "crazier"—but very legal.

Why not order 2—1 for the back, an identical or different one for the front!

**ORDER WITH COUPON TODAY!**



3319 C-11 So. Grand Ave.  
Los Angeles, California

NEW CUSTOM CATALOG—free with order or  
send just 25¢.

## 10 ORIGINAL, EXCLUSIVE DESIGNS CHOOSE YOUR FAVORITES:



No. 1



No. 2



No. 3



No. 4



No. 5



No. 6



No. 7



No. 9



No. 10



Eastern Auto Supply Co.  
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Send \_\_\_\_\_ Car Plaques Numbers \_\_\_\_\_  
(write in plaque numbers here)

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

25% Deposit Required. FOB Los Angeles.  
Postage COD. Add 3% Sales Tax in Calif.

## BENCH RACING continued

operation, the loading between the cam lobe and the lifter may easily exceed 100,000 pounds per square inch, so when "float" occurs, it is quite possible that the impact load could be higher than the strength of the cam and lifter materials.

Deflection of the valve gear is also a problem. The compressive forces upon the pushrod or bending forces applied to the rocker arm, for example, imposed by the accelerative action of the cam lobe and the increasing resistance of the valve spring, can and do cause these members to bend, so that the actual point at which the valve opens and the actual valve lift may not be even close to the theoretical figures obtained by "indicating" the cam lobe.

All the hue and cry about the increased efficiencies of the modern rocker arm engines isn't worth a plugged nickel unless we at least try to take advantage of a couple of factors, one of which is the ability of the rocker arm engine to "breathe" at high engine speeds. This theoretical ability of a modified engine has been limited by the shape that can be ground onto a cam lobe and still keep the rest of the valve gear working as it should, without the need for prohibitive valve spring pressures. This means a peaking speed of around 5000 rpm, which actually is no better or worse than a well-built Ford V8 flathead. However, things are looking up. Recent experiments performed on a Chevrolet V8 engine have shown that engine speeds of 7800 rpm without valve "float", "bounce" or deflection are entirely possible. These figures, believe it or not, were obtained with valve gear that was completely stock in every respect, except for the valve spring pressure, which was moderately increased, and the cam lobe. But a price had to be paid; power output below 3500 rpm was, in a word, lousy, and the idle was worse, a thing of awesome awfulness, even to the drive-in set. But above 3500, the power came on like "Gang Busters." Such a cam would be an ideal choice for an engine that was to be operated in a relatively narrow engine speed range, say from 3500 to 7000 rpm, such as a hydroplane engine, where at least 7000 rpm is a prerequisite in order to win races.

Perhaps the most satisfactory compromise for a street engine, either overhead or flat-

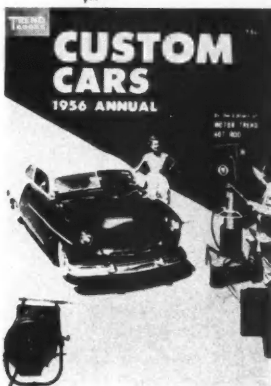
head, has been the advent of a new breed of "full race" grinds. Their accelerative actions upon the valves is relatively fast, the valve lift is high but the duration is on the mild side. The results, when the cam has been correctly applied to a given engine, have been indeed excellent; the idle is smooth but not quite stock-like, low and midrange torque is very good, maximum power output is acceptable and maximum engine speed is surprisingly high. However, the latter statement is dependent upon several factors. First, the valve gear, including the lifters and the valves themselves, require a certain amount of intelligent lightening, consistent with good strength and stiffness. Second, the cam lobe should do the major work of raising and lowering the valves; in other words, the rocker arm ratio should be as close to 1 to 1 as possible because the higher lift ratios work inversely to produce higher loadings upon the cam lobe. Third, the valve springs pressure should be as light as possible. With pressures of 170 pounds with the valve closed and not exceeding 200 pounds with the valve open, engine speeds of 6000 rpm are no problem, given the proper lobe shape.

At the present time, we are entering a new era of racing camshafts. The things that are regarded as commonplace today in this field were undreamed of a few short years ago. And, as techniques improve, metallurgical problems become more thoroughly understood and the requirements of engines become more completely satisfied, the modified passenger car engine, as a power-producing package, will undoubtedly exceed all original expectations. But out of all this, one factor emerges as a clear-cut certainty: There will never be a single, "ideal" camshaft for all engines and applications. In fact, quite the opposite is becoming increasingly evident. So, the correct choice of a cam for a given engine and application must be made after the problem is studied from all angles. The potential power and performance is there, but it's up to the individual to say the right word to bring it out.

NEXT MONTH:  
FULL BONNEVILLE  
COVERAGE

# CUSTOM CARS ANNUAL

NOW ON SALE AT YOUR NEWSSTAND!



"KNOWS—ALL  
The  
ABOUT



SHOWS—ALL"  
of the ten best customs  
CUSTOMS

Brings you a full year's finest automotive creations. A wealth of "how to" material, hundreds of pictures, detailed description of custom work and cost analyses—plus the newest ideas in customizing.

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Completely new No. 2  
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Specifications and  
photos of all stock  
cars of the world.

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How to build hot rods  
and how to make  
them go. 1955 edition  
includes latest official  
drag strip time  
records.



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I am enclosing, @ 85¢ each, \$ \_\_\_\_\_

Please send me the following books as indicated:

- ☐ CUSTOM CARS ☐ HOT ROD ANNUAL ☐ PLASTIC CARS  
☐ WORLD'S FASTEST CARS ☐ MOTOR TREND AUTO YEARBOOK

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& mail  
today

## WORLD'S FASTEST CARS



## WORLD'S FASTEST CARS

An exciting story of  
the men who built  
the great Ferraris,  
Bugattis, Daimlers,  
and all of the world's  
speedsters.

## PLASTIC CARS



## PLASTIC CARS

How to design and  
build a car body from  
plastics; complete  
manual with illustra-  
tions of latest  
Fiberglass cars.

# 17 pt. Self-Cleaning Plug Alone Shows 8 hp Gain and 7 mph Greater Speed!

**Eddie Edmunds**  
CHASSIS DYNAMOMETER CHART

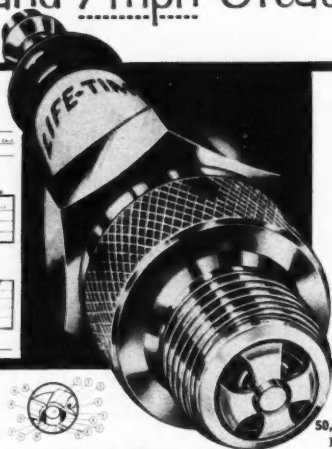
Model No. 1000  
Horsepower 1000  
Torque 1000

**Power Test**

Time (sec.)	Speed (mph)	Power (hp)	Torque (lb-ft)
0	0	0	0
10	10	10	10
20	20	20	20
30	30	30	30
40	40	40	40
50	50	50	50
60	60	60	60
70	70	70	70
80	80	80	80
90	90	90	90
100	100	100	100

**Recommendations**

Engine running on 100% octane gasoline with 100% power.



**Tustin Auto Parts**

120 West Main Street, Tustin, California Phone WH 6-0001

Representative W. G. Tustin, California

Since 1911:

In December 1911, 1912 at Orange County High School, Orange, California, California, the first LIFE-TIME Spark Plug was tested. The results were as follows:

Run	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
1	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
2	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
3	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
4	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
5	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
6	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
7	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
8	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
9	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
10	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

These tests were conducted in 1911 at Orange County High School, Orange, California, California, the first LIFE-TIME Spark Plug was tested. The results were as follows:

100.00

## HOW 17 PT. FIRING WORKS

Note electrodes closely. A circular arcing area (four concave segments). Gap being the same from all points. Electricity has property of arcing from coldest point. Current also arcs more readily from apex of two planes than from the face of a flat, metallic surface.

Note that there are 16 apexes (where two planes meet) — all the same distance from the center electrode. Normal heat and spark erosion are spread around the entire 360 degrees and around the whole circumference of the center electrode.

## FULL ROTATING SPARK

allows overall cooler electrode temperature for greatly increased life. Hotter spark prevents fouling, yet the rotating and cooling effects minimize the common faults of burning, erosion, blistering and insulator failure. Compare this principle with the conventional 2-point spark plug design.

**PLATINUM-NICKEL ALLOY ELECTRODES**—Metallurgists' first major step beyond platinum aircraft plug electrodes. Arcing points of this material have continued to function after the equivalent of 120,000 car-miles.

**SPECIAL SINTERED CORUNDUM INSULATOR**—Made of gem-like mineral which conducts heat 20 times better than ordinary porcelain. Special shape is designed to vaporize and exhaust wet carbon and oil.

- INDIVIDUAL INSPECTION**—Each LIFE-TIME Spark Plug is tested for firing in oil and for resistance to 30,000 volts C.W.
- PERMANENT GAP**—After months of use LIFE-TIME Spark Plugs make at exact factory pre-gap.
- SELF CLEANING FOR LIFE**—Confined gases exploding in chamber formed by multiple electrodes reclean arcing surfaces with each firing stroke.



**NOW... ORDER REGISTERED SET FOR YOUR CAR AT POPULAR PRICE!**

**Dealers and Distributors:** The LIFE-TIME Spark Plug is now in full production. Write for full details. Distributors: Please inquire us to status of your territory.

## 50,000 CAR MILES!

Before LIFE-TIME development, the spark plug was the most often replaced part of your car. Engineers agreed that "creeping paralysis," gradual electrode disintegration, carbon buildup, widening gap, could waste one gallon in ten. The LIFE-TIME Plug has now gone far beyond the life of the average set of tires, the average battery. This plug still fired clean, hot and steady at 50,000 car miles!

Most spectacular spark plug research breakthrough in 50 years allows us to include this unique and unprecedented warranty with every set of LIFE-TIME Spark Plugs. WE GUARANTEE GREATER CAR MILEAGE — GREATER ACCELERATION — A MAJOR POWER INCREASE — OR YOUR MONEY BACK.

## YOU RECEIVE BY MAIL

this registered set of LIFE-TIME Spark Plugs in proper series (heat range and gap) for the car you indicate in coupon. NOW AVAILABLE FOR AMERICAN & EUROPEAN PASSENGER CARS, TRUCKS, BUSES, FARM EQUIPMENT, INDUSTRIAL ENGINES.

**LIFE-TIME Spark Plug Division, CONTINENTAL MANUFACTURING CORP.**  
Washington Blvd., at Minor Ave., Culver City 27, California

Customers: Please mail postpaid... set(s) (registered) of LIFE-TIME Spark Plugs in proper heat range and gap for my car at \$1.19 per plug (Set of six, \$7.14. Set of eight, \$9.88). (Or send \$1 per set, balance C.O.D.) California residents add 3% tax.

Make of my car is..... Year.....

Model..... No. Cyl.....

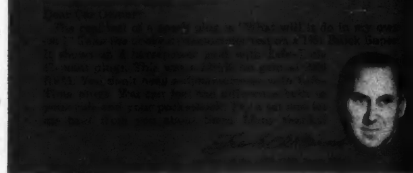
I enclose \$..... (check, cash or money order)

Name.....

Address.....

City..... Zone..... State.....

## 8 HORSEPOWER GAIN!



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